

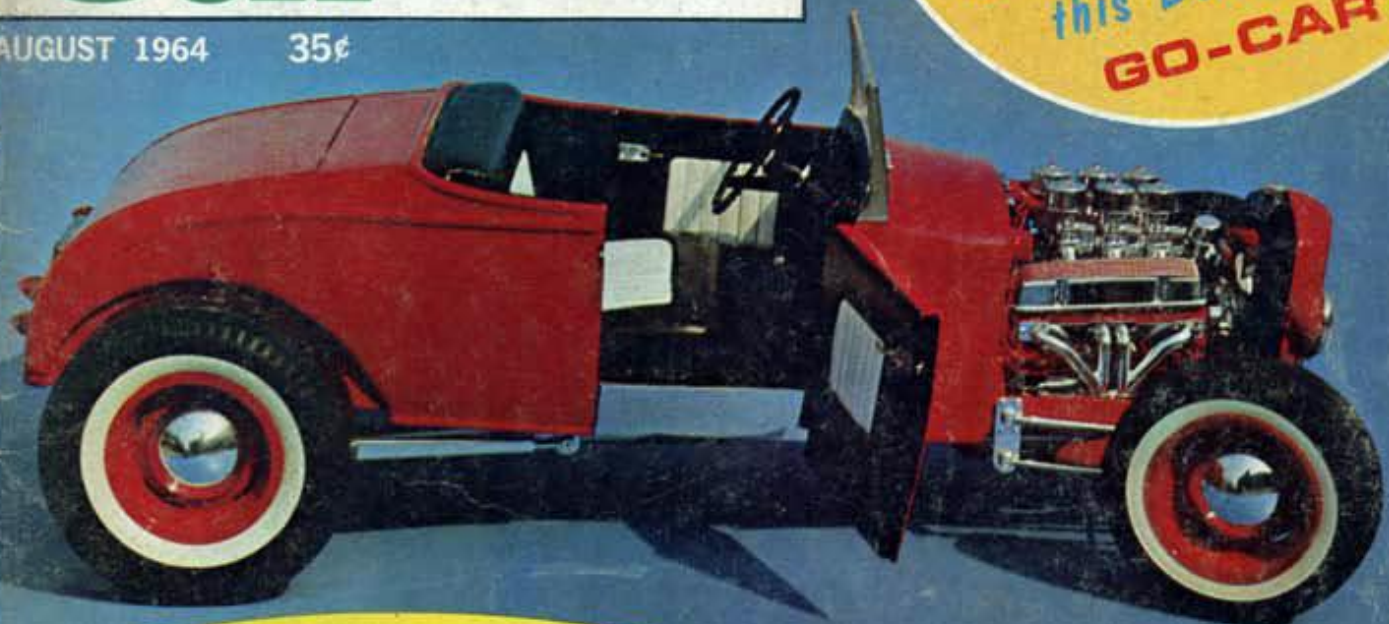
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AUGUST 1964

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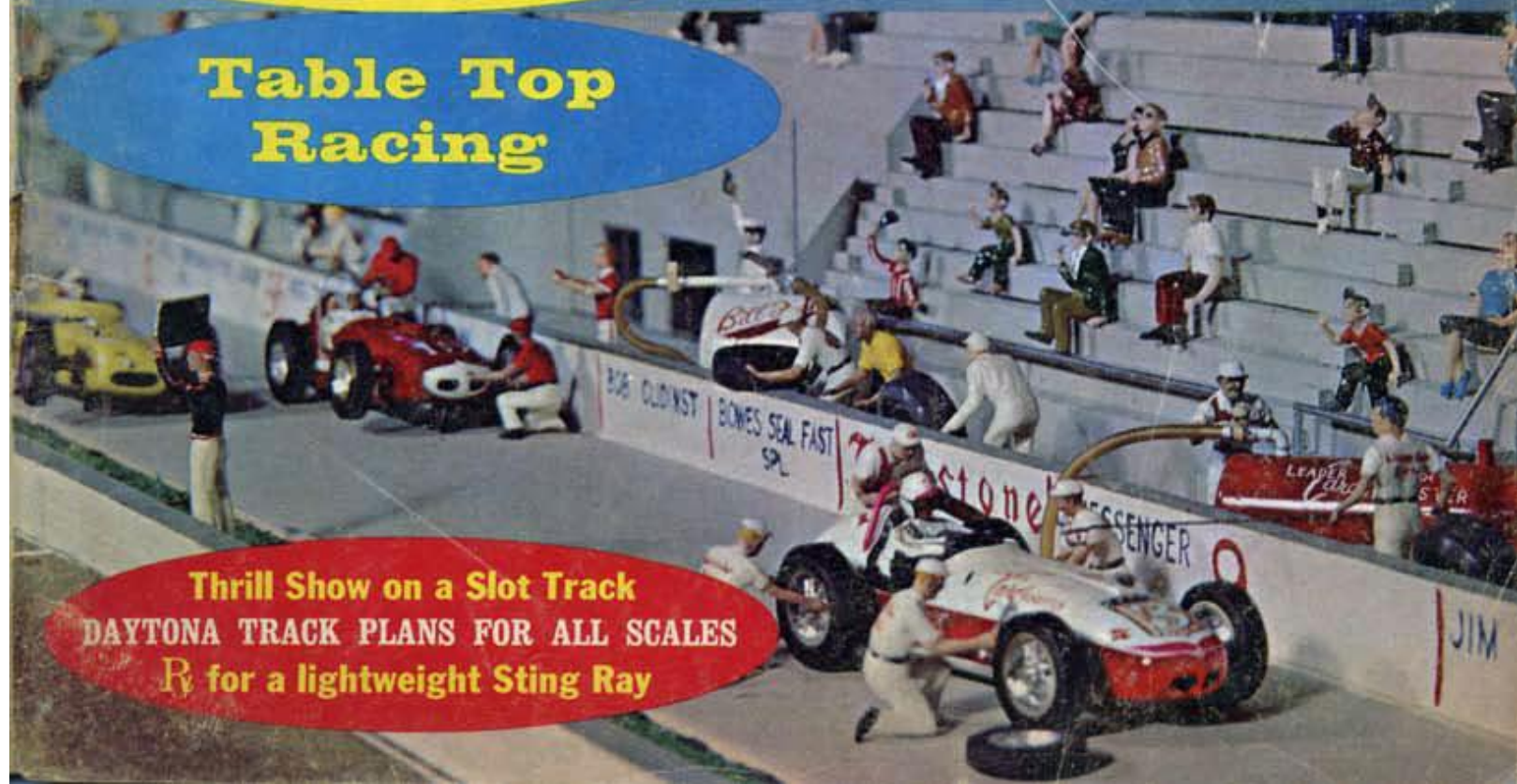


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model car *Science*

Volume 2, Number 8

August 1964

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COVER PHOTOS — Bob Hoepfner pulled out all the stops when he decided to motorize the kart that piggy-backs AMT's new customizing kit of the snappy Ford F-100 pickup truck. The 1/8 scale '29 Ford Roadster built by Jim Savage of Artesia, California was best in its class at the last Winternational Model Car Show. Construction details on this rod are on page 18. The pit scene is a portion of the track belonging to the Indiana Miniature Racing Association. It is a four-lane duplication of the Indianapolis Motor Speedway, and will be the scene of an Indianapolis '500' type race to be sponsored by the Association on September 5 and 6.

5



MILD-OR-WILD... AMT MODELS ARE THE BEAUCOUPS, MAN! (THE MOST)

[A] THE LOTUS POWERED BY FORD. Kit includes two engines—modified '63 Ford V-8 and a new '64 V-8 with dual overhead cams, chrome goodies from hubs and axles to 12-piece exhaust system!

[B] CAR CRAFT "DREAM ROD." Doors, hood open... wheels steer... display stand revolves. Build Cushenbery's design with detailed chassis, Ford quad overhead cam engine... in short "the works!"

[C] FORD POWERED COBRA. With Weber carb. Roto-Faze ignition, knock-off mags, competition exhaust for racing. For show and go, a fastback top, custom taillights, exhaust

extensions, and opening trunk lid.

[D] THE FABULOUS SILHOUETTE. Cushenbery's original design... powered by big booming Ford '427 engine... features a wild custom trailer... the greatest goodie yet from AMT!

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MODEL MAIL * * * * *

Engines for Customizing

I would appreciate your telling me where I can buy engines for customizing such as the "blown Chrysler" engine shown in your Jan. '64 issue.

Daniel C. Grogan
Tyler, Texas

There are a number of 1/25th scale engine kits now available on the market with more to come. Revell leads the parade with seven of them. AMT has them from a Corvair to an Allison, and Aurora has started to market some. Your hobby shop should have a wide selection.

Smoothing Body Putty

I have been customizing cars for about five years. I have used putty often but it seems to turn out rough or with holes in it, how can I get a smoother finish on it?

Bill Van Skike
Lamar, Colorado

Generally filler or body putty will have a number of very fine air holes on the inside. These will show up when an area has been built up, then finished to shape and blended to surrounding panels. The holes can generally be filled by painting the area with primer and then wet sanded. It may take a number of applications to fill and blend completely, but it must be done to have a perfect base for final finishing.

CUTTING TOOL

A couple of my buddies and I have Ungar woodburning sets and would like to use them on our models, but I can't seem to obtain the right tips. Do you have any ideas as to where we can get these without buying a whole kit?

Glenn Charlow
Maryland

The most commonly used tip in an Ungar iron is the Auto-cutter tip available from Auto World, Box 961-M-8, Scranton, Pa.

Glue Spots

Could you tell me how I can remove a glue spot?

Edward Yee
Los Angeles, Calif.

Dupont Rubbing Compound will remove most of the pitting made by glue runs. It will also remove paint runs, small mistakes or whole paint jobs.

DOOR HINGES FOR MODELS

In the October issue of M.C.S. you have an article on hinging early Ford doors, and I would like to know where I could get hold of these hinges and how much they cost.

David Finney
Accokeek, Md.

Auto World has an Auto Hinge kit for 50¢. It includes instructions for making many types of hinge installations.

Spur Drive vs. Pinion

While reading the Sept. issue of MCS, I came across some outstanding road racing tips. I don't want to sound naive, but I was wondering why spur drive is better than pinion?

Tom Charlton
Batavia, Ill.

Gearing for model car racing generally falls into one of three types of installation: contrate, bevel and spur. Each has certain factors in their favor. The most generally used is the contrate, this is found on all commercially assembled, or kit type cars, Strombecker, Revell, Lionel etc. It is the cheapest to produce and allows more room for misalignment than the others. The contrate gear is punched from sheet stock and then formed into a cup, the gear tooth profile therefore cannot be perfect and the punching operation leaves a coarse edge to the tooth face. As the tooth face is somewhat thin and not equally shaped, they can not be adjusted to as close a tolerance as the other types. The thin

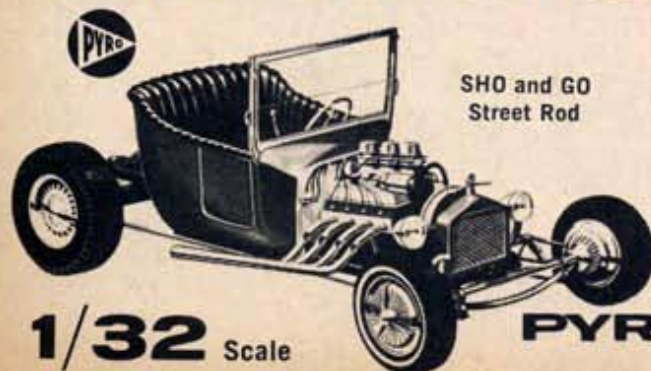
tooth face also allows a greater degree of misalignment without effecting operation.

The bevel and contrate gears are set up and operate in the same basic manner. Power is transmitted through a 90 degree angle, or stated in another way, the motor shaft is at a right angle to the driven shaft (the axle) so any power transmitted by the motor to the axle has to turn a corner. One other thing they have in common that the spur gear does not, is the fact that they both produce a side thrust on the axle gear. This thrust produces friction, as some means of counteracting it must be used or the gears will not stay in mesh. Spur gears operating in the same plane (both driving and driven shafts are parallel) do not produce a side thrust thus, other things being equal, will operate with less friction.

The bevel gears are the most expensive to produce due to the machining involved to produce the gear teeth. Close examination will show the teeth taper towards the center and, if cut without center relief, would all meet as knife edges at the center of the circle they form. Pinions must be cut at the mating angle and radius dimensions for proper tooth engagement (the reason they are sold in sets). Angles change between a 3 to 1 and 4 to 1 set preventing interchanging gears.

Spur gears vary a great deal in quality, the cheaper ones being stamped from sheet rock. The shearing rolls the edge of the metal somewhat and produces a tooth that is not consistent in dimensions from one side to the other. Operating faces of the teeth are usually rough and not square with the center line of the gear. Machined gear teeth are the best as tooth profile will be the same on all teeth, working edges will be smooth and at right angles to the gear face. These can be adjusted closer and will run quieter and have a lower power loss.

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The 3-in-1 Chevelle El Camino, Thunderbird HT, working lights, Ford Galaxie 500 XL, Darlings and Slicks and the Falcon Sprint are the newest items from AMT this month.

Featured in the Chevelle kit are a low slung drag boat plus three hot racing engines. The creative modeler gets such features as the custom hood, full tonneau cover and a host of extra super realistic parts. Also included in this versatile kit are 1/25th scale surfboards.

The 1964 Thunderbird HT kit features custom taillights, seats and grill, plus the top can be finished as an Italian fastback, or with a clear top or tonneau cover. This kit can be added to your collection for only \$2.00.



The 1964 AMT Falcon Sprint is featured in the rally version and also in the custom version. Rally features are: bucket seats, side exhaust, Weber carburetors, "Airheart" disc brakes, mag wheels, road lights, and a three piece roll bar. Retail price of this kit is \$1.50.

The Ford Galaxie 500 XL fastback hardtop, features operating taillights and headlights and also includes a big "427" engine, bucket seats, four on the floor and more. Everything from custom front and rear end treatments to mag wheels and Winfield exhausts. This \$2.00 kit has all the chrome goodies that model car fans need to create stock, custom or racing versions of this hardtop.

AMT lights that actually work are the newest accessory that can be added to all 1/25th scale model cars. Both headlights and tail-lights are pre-wired and ready to install. Two small flashlight batteries is all it takes to operate the lights. The \$1.00 light kit contains four headlight bulbs, two taillight bulbs, wire mounts, on-off switch, one double com-

continued on page 10

MODEL CAR RACING ASSOCIATION

NATIONAL RULES AND REGULATIONS



THE MODEL CAR RACING ASSOCIATION RULES are designed to give its members equalized racing procedures, yet at the same time members have a full opportunity to experiment with new ideas. The MCRA rules give you regulations for road course racing in 1/24th and 1/32nd scales, in four body classes for each scale. The regulations encompass three age groups and two driver classifications.

MCRA COMPETITION LICENSES, issued to members, are a must for eligibility in Local, Station, Regional, and National sanctioned events.

AGE CLASSIFICATIONS for drivers are: Juniors; under 13 years of age. Seniors; 13 to 16 years of age. Open; 17 years and over. Each age group is divided into a class for the novice and a class for the experienced competitor.

IF YOU JOIN THE MCRA, you will receive the Official Rule and Log Book covering general racing regulations (what you can and cannot do with your car). Racing procedures on the rules of the events. And, there's a section on awards, points system, timing runs, a special Revell class and a log for tabulating your eligibility for points and awards.

MCRA MEMBERS CAN WIN FREE TRIPS, including lodgings, to the Grand National Championships and be eligible for special college scholarships and many other prizes, trophies and benefits that only MODEL CAR RACING ASSOCIATION MEMBERS receive.

A SPECIAL BONUS BENEFIT for members is that you're entitled to a year's subscription to MODEL CAR SCIENCE Magazine for ONLY \$2.00 a year.

JOIN TODAY and get your official rule book... colorful decals, membership pin and a chance to compete in true championship racing on official design road courses. Yes, the MCRA sanctioned tracks all have the SAME design so that you may race in the Local, State, Regional and National meets, knowing that you are an experienced driver on the course.

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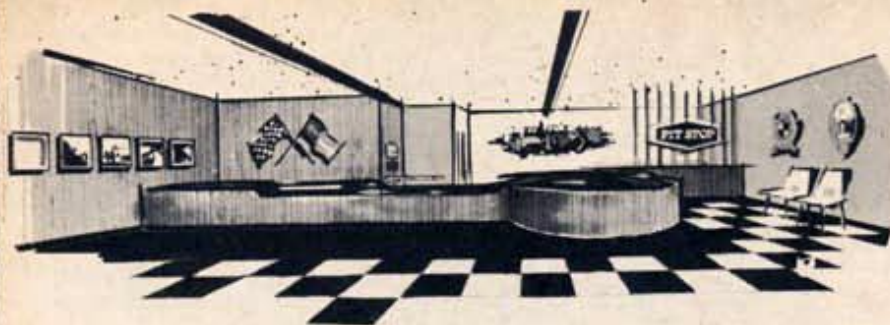
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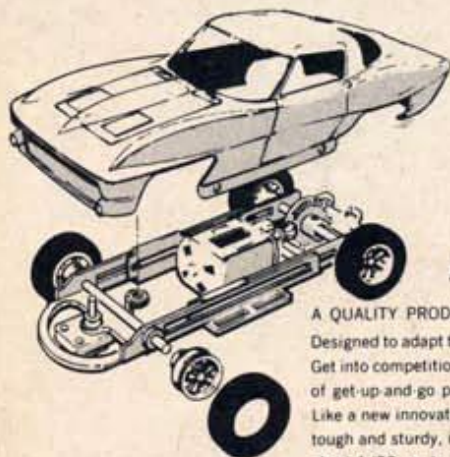


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NEW TO SCALE continued from page 9

partment battery box, four clear lenses, one electrical contact and two electrical clips.

Built to withstand heat and stress of the high speeds attained during slot racing, AMT's new Darlington Racers and oversize Slicks from are made from extra soft rubber and fit most 1/25th scale model wheels. Priced at \$1.00, each kit contains four Darlingtons and two Slicks.

America's Hobby Center, Inc. has just reprinted their four page booklet on suggested rules and regulations for model car racing. This free booklet is available to readers of Model Car Science, simply by writing to the following address and requesting this booklet and enclosing a 5¢ unused U. S. postage stamp.

This rule-regulation covers classes of cars, car design, recommended rules, track design, commercial track operation, promotion and other tips and hints. Send 5¢ to America's Hobby Center, Inc., 146 West 22nd Street, Dept. MCS: Rules, New York, N.Y., Zip 10011, and they will mail you one.



Now available in 1/24th and 1/32nd scale is the new Lotus 30 slot car body. Made of clear, lightweight plastic this Stormer body is only 98¢. Coming out with the Lotus 30 will be the Ford G.T. with the same features as the Lotus and at the same price. Both bodies are pre-trimmed.



K & B's new Pit Stop speed controller offers instant response and smooth acceleration through its entire travel. It's sensitive spring-loaded throttle action insures full power when needed. All metal case is built to withstand extreme heat and electrical overloads. The unit can be operated at 12 to 36 volt D.C. This model 702 controller with alligator clips lists for \$5.95; the No. 703 (same but with brakes) sells for \$6.95.

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CAR OF THE MONTH



'64 Ford G.T.



From Victory Industries comes a new series of slot cars. All the new models have Ackerman type front ends and removeable rear guide pins. Present body styles are the B.R.M., Ferrari, Lotus and Cooper. Using a 3/32 inch diameter rear axle and 4:1 gear ratio. The motor is a 6 pole armature which means faster starts and smoother acceleration. Contact your local dealer for additional information.



Mila Miglia SS axles for slot cars and drag racing are now available for 39¢. These C&O axles come in increments of 1/4 inch from 2" to 3", the 2 3/4" and 3" axles have additional threads for use with threaded gears. The new axles may be purchased from your local hobby dealer.



A new range of seven racing motors are now being introduced by Aristo Craft Distinctive Miniatures. The new motors are known as the "R" series numbering from R1 for HO autos and R2 to R6 for 1/25 and 1/32 scale cars. Aristo-Craft motors are \$1.98 to \$3.98 through leading hobby dealers.



Select-a-Lane crossover is here for the Auto-Rama 3 rail system. This \$7.98 unit requires driver skill in controlling the pace of the car. At the right speed, you throw the switch to change lanes or to prevent the lane change. For details contact E.H. Withington, A.C. Gilbert Co., Erector Square, Dept. MCS, New Haven 6, Conn.

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Modeling MOTORCADE

MCS recently toured the country seeking the best in newly-built custom models. This show case of cars is a sampling of potential contest winners seen at various car shows. Our photographer is an expert when it comes to picking unique cars, he's California's customizing king — George Barris.

MODEL CAR SCIENCE recently toured the nation visiting many major model car shows to note first hand the current modeling trends. Most of the models pictured here are from Texas, Maryland, Virginia and Washington, D.C., and it is interesting to note that over half of them are full customs. This is no coincidence because about half of the cars entered in each of the various shows or contests were full customs. Strongest styling trend observed was the use of bubble tops. Most builders are

no longer content to use a bubble top as it comes out of the package or kit. Pay close attention to how these modelers changed their bubbles. Several cut and hinged only half of the bubble, while others tried building in a roll bar.

Experimental cars seem to be gaining in popularity also. Although more difficult to build, these experimental cars create quite an attraction. Other styling trends noted were the use of tape, colored or chrome, for trim, and quite a few metalflake paint jobs.



From N. Reading, Mass., comes this far out '57 T-Bird. Extensive putty work and a candy paint job set this off as a winner.



This custom pick-up is built by Paul Vogel of Falls Church, Virginia. With the help of a few tools, Paul turned this '60 Pontiac into a custom pickup.



Mark McNutt of Maryland has a winner in this '39 Ford with corduroy upholstery. Chopped and sectioned, this car is an outstanding full custom.



For an exceptionally low car, just chop it, section it and channel it. Here's one with a hot Pontiac engine and custom upholstery.



For a 'different' pick-up, note Chuck Kern's '34 from Maryland. An all chrome Chrysler plus a bubble top set this hauler off very nicely.



This '57 'Bird from Bernard Foster of Glen Burnie, Maryland has that lean, hungry look. Note the smooth sculpturing of the hood scoop.



For a "what-zit" how about this 'Vette from Washington, D.C.? Auto World tape and Pontiac wheels are just a few of the ideas here.



This sleek, one passenger, sports car has many good ideas. Off-center styling, molded in roll bar and a custom made white stripe on the tire tread are just a few.



This clever creation comes from Silver Springs, Maryland. Combining the Beatnik Bandit fenders with a '32 Ford really works.



John Estlow of Virginia took the radical route in redesigning this T-Bird. A sectioning job for a shorter wheel base and hinged roof make it tops.



For something extra special, try an asymmetrical design! An outstanding feature of this car is the grille-headrest combo that seem to match perfectly.



You don't have to go radical to have a good looking custom. Louvering and a paint job is sometimes all that's necessary.



This beautiful '57 Ford shows what can be done with customizing parts from other cars. The rear portion is from a Pontiac kit.



Fantastic is an understatement! Radical to be sure, but beautifully done. Detroit should take notice, suddenly they are out of date.



Mike Lerch of Bladensburg, Maryland, took the competition route when he built this '49 Merc. from the blower guard to the radiused rear wheels, it's fast.



Forty's forever! This chopped Ford was conceived by Frank Miller in Arlington, Virginia. Note flawless paint job.



Beauty in simplicity describes this '40 Willys from Virginia. From the stripping to the perfect paint job, this car is very neatly done.



What do you do with decals? You build a competition roadster and put them to use. With slight modifications, you'll have a distinctive car.



Very little needs to be done to have a good looking roadster. A big engine and stripping sets this "A" apart from the ordinary.



Howard Parzow of Silver Spring, Maryland, has come up with an original idea for a sun roof. Check the lightning holes in the rear fenders, smart!



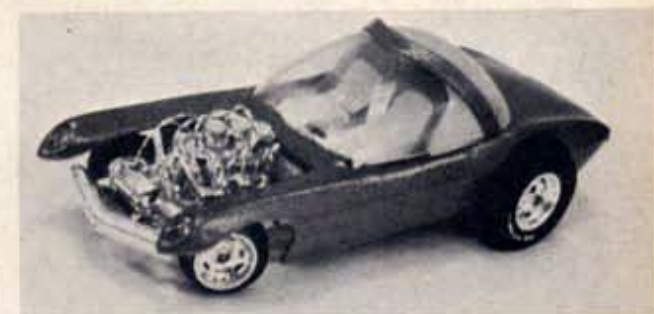
A good place to put an Allison engine is in a streamlined dragster. Many kits went into this model. Difficult to do, but it's a winner when through.



A dragster that's different. A combination of many parts, this "goer" should really "turn on." The wiring serves to be the final touch.



An outstanding Eastern custom, this '57 Chevy features a very interesting sun roof. Cut from a bubble top, the roof really makes this custom.



Rod Hampton of Virginia really updated his 'Vette. A different treatment for the front fenders and restyled bubble top accentuate a metal flake paint job.



With all the body seams filled in, Revell's XK-E, Jaguar takes on a new look. With opened doors and trunk, this model is superb.



Another version of sun roof styling is found on this '53 pickup. The two sections of roof slide back for that open feeling.



A very simple but distinctive design is represented here. With opening doors, hood and trunk, this car shows that clean lines are always a winner.



Extensive body work has been performed here in order to have a streamlined dragster. The homemade drag chute is done very well.



An interesting idea is tried on this eastern coupe. Sectioned body and chopped top with a sun roof plus opened doors and trunk make it unusual.



This '39 Ford has a different type of opening doors. They swing on a pin instead of hinges. This car also has bucket seats that swivel.



Chip Wittington of Arlington, Virginia, comes up with a modern version of the opera coupe devoid of all exterior trim.



With a perfect chop and channel job, John Shobe of Maryland showed his ingenuity by using two radiator shells on edge as a spot for the grille and headlights.



Richard Hines in Washington, D.C., shows what can be done with many parts. Five different kits, at least, have been used by Dick.

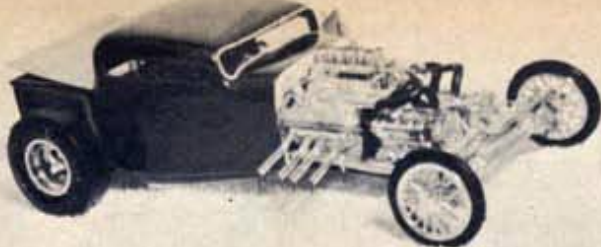


Richard Woodson of Washington, D.C., decided on a difficult change and succeeded with this sharp "woody" that is strictly stock except for the seats.



A well built dragster with engine wiring is always pleasing to look at. This one from Washington, D.C. is a good example.

A radical front end job is accomplished by using putty. A chopped top and opened doors are other outstanding features of this cool custom.



For those who want basic transportation to and from the corner store, this is it. The twin blown Pontiac engines in this pickup should prove adequate!



An interesting competition flavored car, #45 has its origin concealed in its redesigning. The flat wheel disks add to its look of speed.



An old kit, this AMT dragster has been given new life by John Gross with the addition of an Allison engine and Revell wheels and tires.



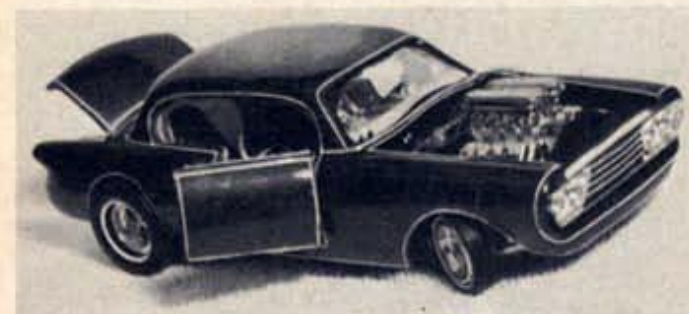
What started out as a "D" Jaguar, has been converted to a beautiful sports car. The chrome roll bar from the Corvette kit fits very well.



Highlights on this custom include chopped top, corduroy upholstery, lid-type hood and cut-away rear fenders.



Smooth flowing lines are the keynote on this roadster. The racing stripes are carried out to the single strip on the tires.



This highly customized '49 Ford features tape stripping. It took two kits to get the bucket seats and the '53 Ford pickup for the grille.



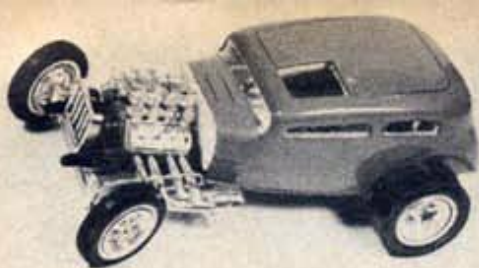
This convert offers a truly original rear end design. With no external trim, the car is attractive because of its unique appearance.



This '57 'Bird must be nominated for the brightest metal flaker ever! Looking further, notice the novel front end design and the cut-into bubble top.



Not a very exciting kit to start with, Richard Gray, transformed this Renault into a real potent drag sedan. Paint job is metal flake.



Fast and powerful are written all over this chopped '32 by Gary Helton of Washington, D.C., to get in or out, driver uses the hole in the roof.



Here is a good example of what can be done by using only the customizing parts in a kit. Skillful blending of parts produced a great custom.



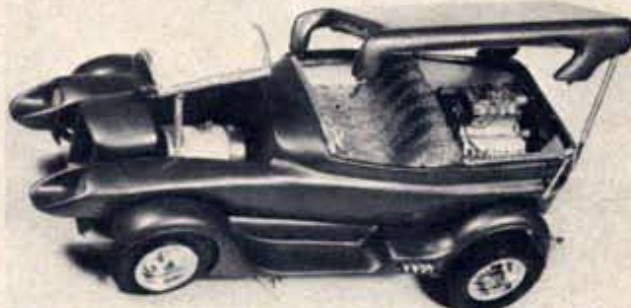
Robert Herzog of Landover, Maryland, is responsible for this machine. Metalflake paint job is among the best. Check the punched wheels.



For those who like fresh air, this is a winner. Radical yes, but also good looking. The body work is flawless as is the paint job.



For a screamin' demon this rates high. The number of different kits in this car can't be counted. Sun glasses are needed to see this one in the daylight.



This very original '32 Ford is built by Gerald Foster from Maryland. Body is truly a work of art. Top is held in place with small pins.



Customizing with paint is not new, but it's hard to do. Jeff Dwen came through with the idea and deserves an "A" for his effort.



A Chevy II with a Mopar engine! Cut out the rear wheel wells, add a few Auto World strips of customizing tape and be proud.



For a faster car try two engines. To see where you are going, cut a portion of roof out and fly.



Although asymmetrical in design, this Pontiac still emerges with a touch of conservatism.



Traction is no problem for this sectioned bomb. A blown V-8 and late model bucket seats add finishing touches to car.



Rod Hampton of Virginia came up with a winner in his futuristic T-Bird. The interior is done neatly in felt material.

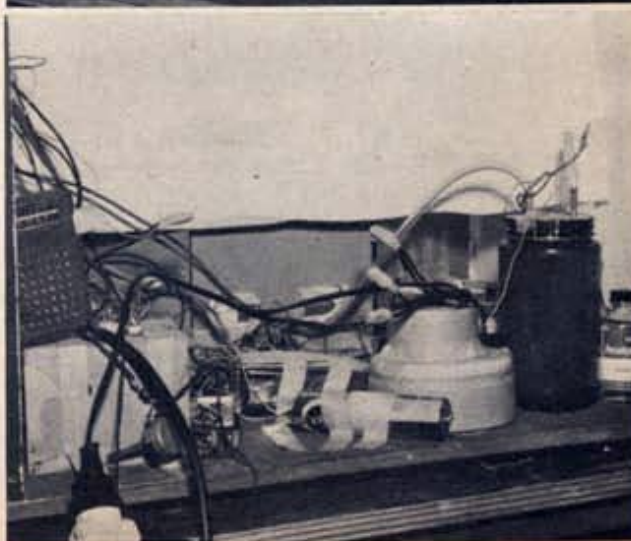


Bubble tops do a custom make? Yes, when done right as with this '62 Pontiac. The car is lowered all away around with a candy paint job.



There seems to be no limit to the variations on a '40 Ford. Here it is as a two door phaeton. Rear fender exhaust set up is a sharp idea.

John Estlow of Danville, Virginia, has come up with, perhaps, the most super detailed model car that has ever been built out of a model kit. It is also one of the most original and interesting displays we have seen in quite awhile. An old TV set now serves as a display stand and control center for the operating components on John's car. The "TV Set" has a transformer that changes the house current to 3 volts for the car's electrical system. Among these components are lights for the trunk, interior, the TV sets in the trunk and interior, under the hood, plus light for the license plate and tachometer. The car has high and low beam for the headlights, back up lights, parking lights and brake lights. Sitting behind the steering wheel, which has a working horn one would find that the front bucket seats swivel and have headrests. You would also see a hand-built, futuristic steering wheel, a floor shift, and roll up windows. The door jambs are chrome and there is a center console. The interior is done in black and white. Under the hood is a Chrysler mill sporting six carburetors with fuel lines, and the spark plugs are wired. An Atlas HO motor turns the fan blade and smoke actually comes out of the exhaust pipes. The body, although done conservatively, has been changed in many places from the quad headlights to the trenched Cadillac taillights. The rolled pans in the front and rear have parking lights and backup lights. The body is fully dechromed with opening doors, hood and trunk. The radio antennas are tunneled. Firestone tires are used with mag wheels. The front end is lowered and all chassis components are chromed, including the quick change rear end. For the finishing touch the car was painted candy red with AMT lacquer.



COVER CAR

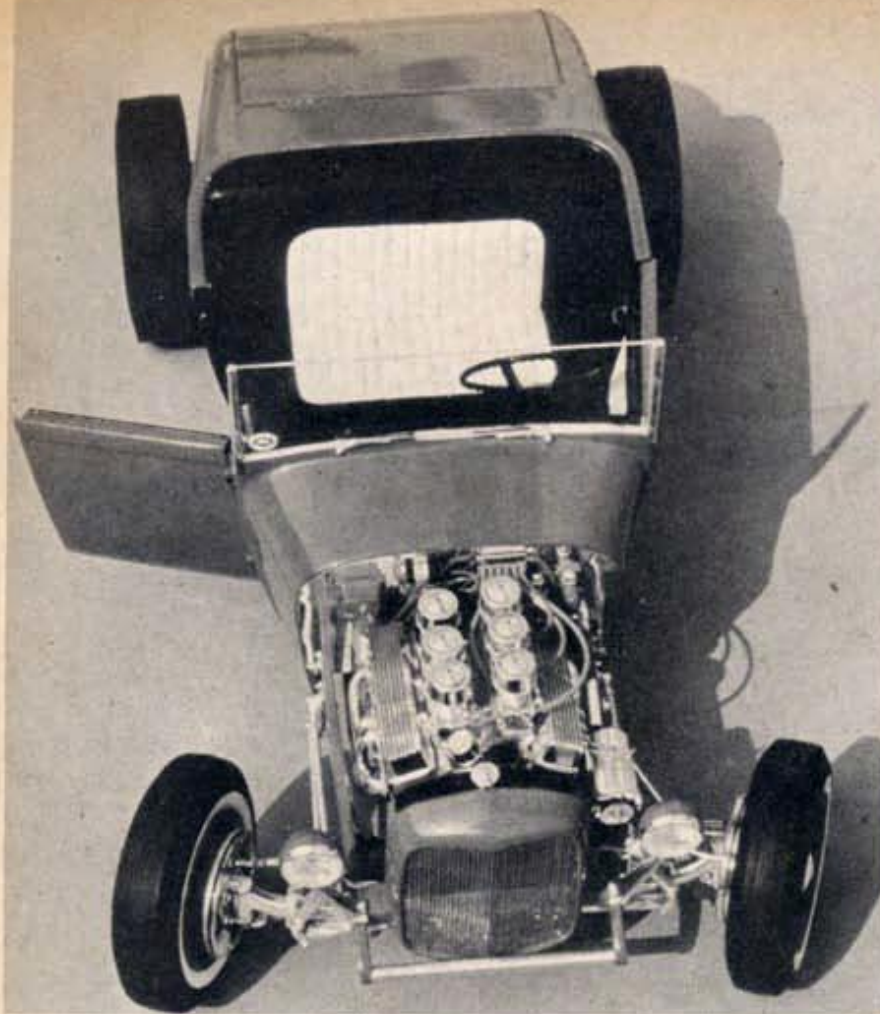
By Jim Keeler

Jim Savage of Artesia, California, decided that Monogram's 1/8 scale Big T parts were just what he needed to create a really fantastic 1/8 scale model. He started with a large chunk of wood, carving tools and lots of spare time and ended up with this beautiful model.

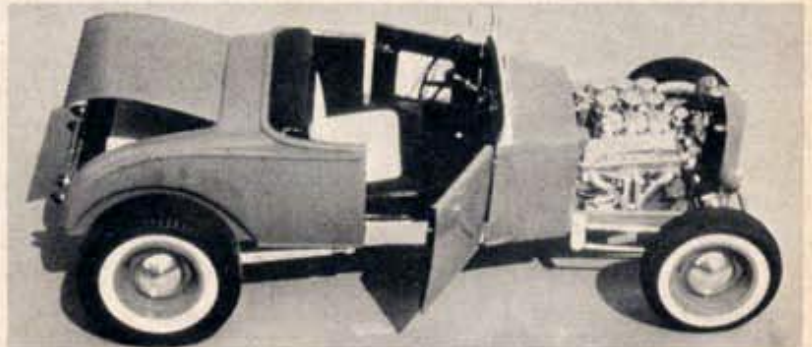
Jim is a member of the Long Beach Chapter of the International Association of Automotive Modelers, and is employed by Modelrama, a well known manufacturer of slot racing parts.

His excellent model building has won him many awards, and this particular car won in its class at the last Winternational Model Car Show.

The '32 Ford radiator shell sports a perforated metal grille. Notice the miniature NHRA decal on the windshield. Valve covers have red paint between the fins to accent the chrome. Color keyed wiring, fuel lines and hydraulic lines are all complete.

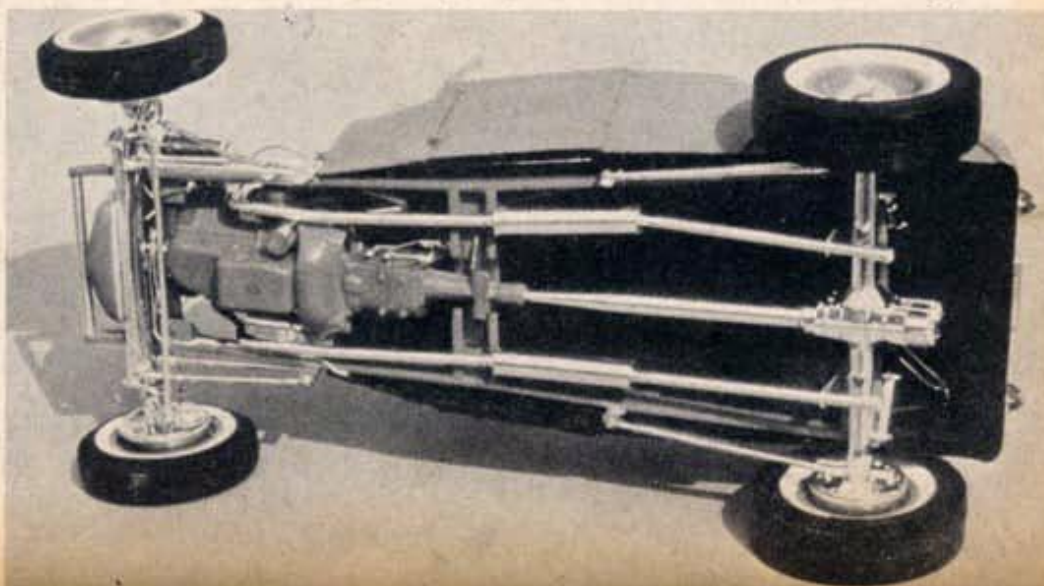


For a finishing touch, opening trunk is complete with a hidden latch. Taillights and brake lights operate individually; when brake pedal is pushed, the lights go on. Headlights and taillights are both operated by a tiny switch on the dashboard.



Opening doors are controlled by tiny handles made of metal. A 1/8 scale "thunk" adds to the realism! All upholstery is real leather; folded into pleats and rolls, just like a custom car's upholstery. Chrome tape on frame rails shows when the doors are opened.

The entire chassis, except for the front and rear axle, is hand made from wood. Exhaust pipes are highly polished aluminum tubing. Metal shift linkage actually operates and even feels like the real thing.



TRY A TOW TRUCK

BY BOB HOEPFNER



Ready to move out. With a full compliment of tools and equipment, our tow truck is ready to handle any emergency.

Emergency service can mean many things. Our equipment can handle everything from a flat tire to a major crash.



Here's a distinctive, easy-to-make, service vehicle that will add more realism to your display

If you are looking for something new and different to add to your collection, a roadside service and tow truck presents a lot of interesting challenges. The equipment is easy to detail and can be made operative with little additional effort. If you are a slot racing fan, what could be more authentic than a tow truck in the pit area on your track layout?

Revell's '56 Ford pick-up truck is a natural for this type of project, and our choice for this conversion. Since everything is attached to or built around the frame, the chassis assembly is our first step.

The stock pickup does not have the weight carrying capability that this type vehicle requires, so some frame changes are required. First fill in the arches on lower side of the frame, file smooth when dry. By adding one crossmember and the removal of one as indicated, we have our basic frame.

To indicate the proper load carrying capacity, this truck requires a dual-wheel rear end. Just to be different, we used the differential and front springs from the Revell '41 Willys kit, however, the stock pick-up kit parts work just as well. Start with the rear end housing. To prevent rear tread from becoming too wide due to the thickness at which the plastic wheels are molded, remove 3/32 inch from the ends of the axle housing. File the outside edge of the brake backing plates on a 45 degree angle to allow them to enter into the wheel completely. Check after removing the center boss on the reversed rim side of two wheels. The backing plates should locate inside the wheel rims. Now is the time to talk your buddy into putting a set of custom wheels on his pick-up. In a casual way, talk him out of the stock wheels as of course we need two more for the dual installation. Now make a ring-type spacer that will allow approximately 1/16 inch gap at the wheel rims.

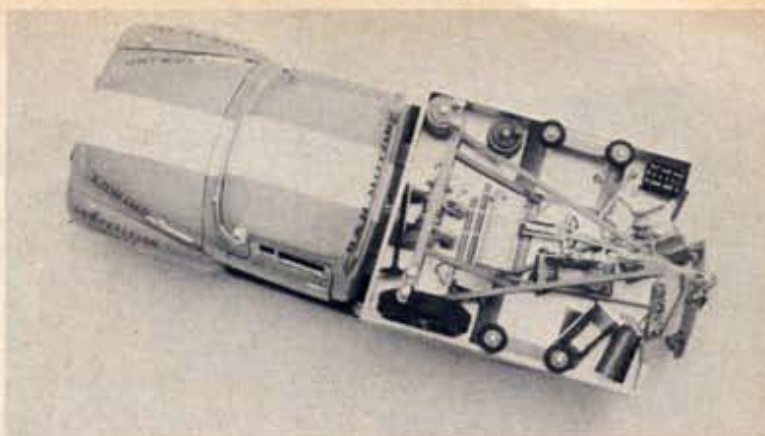
The rear axle can now be assembled. Glue brake plates to housing, install

All detailing on chassis and cab are complete at this stage. Lettering is all of individual letters from H.O. railroad alphabets, and does that take time!

A bird's eye view of some of the many items a service vehicle must carry. They range from fire extinguishers, lug wrench, broom and shovel. Hydraulic jack, tow dollies, batteries, fuel cans and compressed air tank.

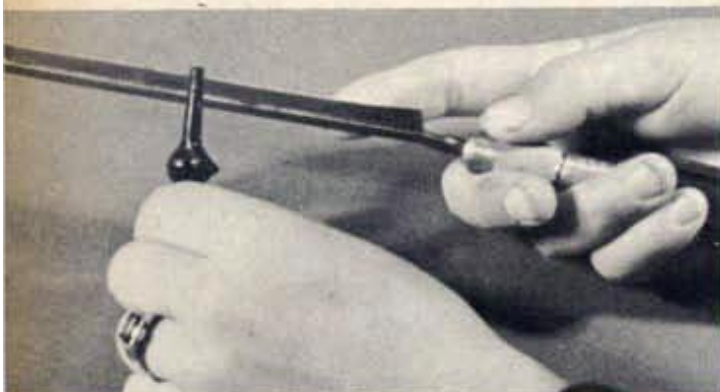
Towing equipment completely installed and rigged. Silver thread makes very realistic cable on hoist. Small wheels are part of rear wheels tow dolly assembly.

Power is supplied by a big Chrysler with dual quad carburetion. Plugs are wired to a Spaulding flame thrower ignition. Seats are black vinyl from Revell interior kit.



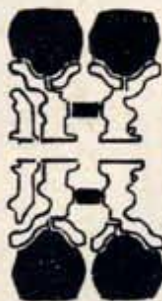


First step is to add frame inserts, use care in shaping for good fit. Top section of kick up should be filed flat after inserts are dry.

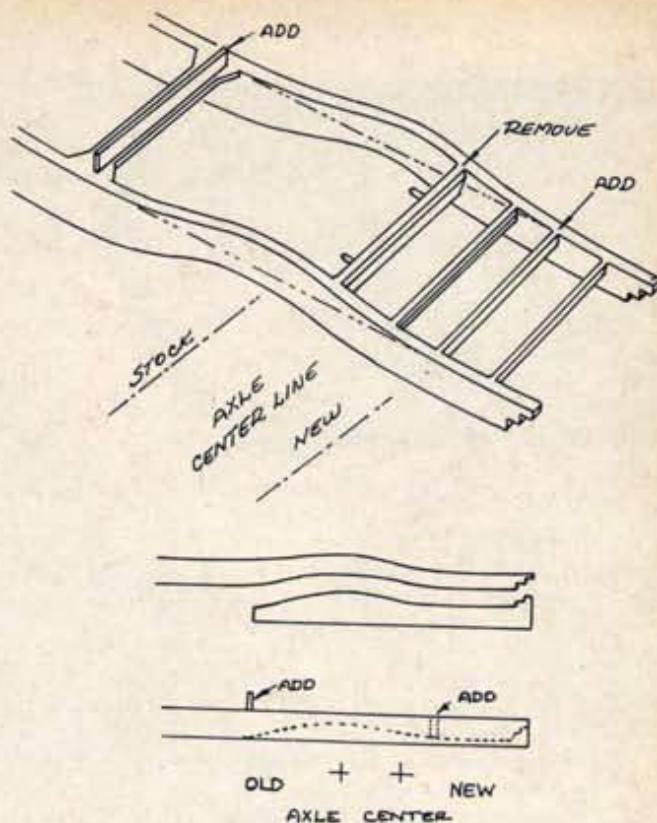
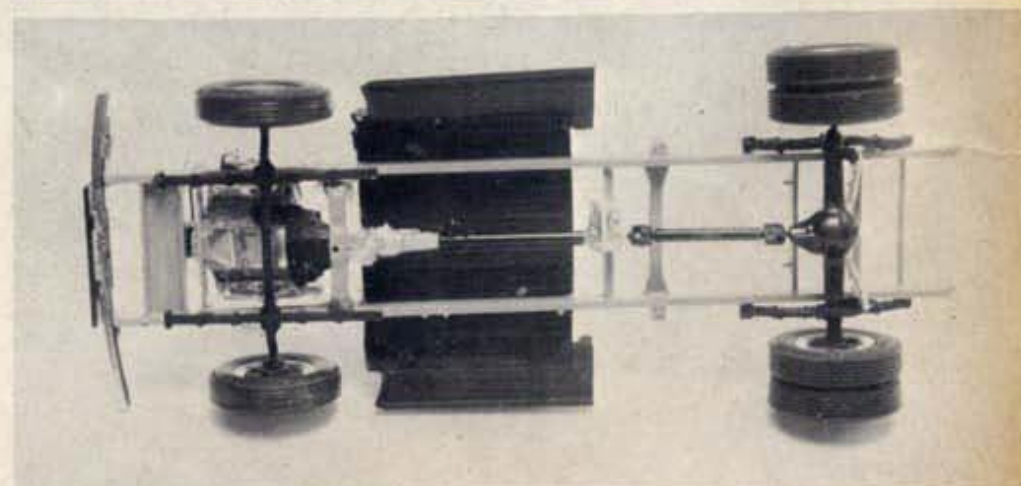
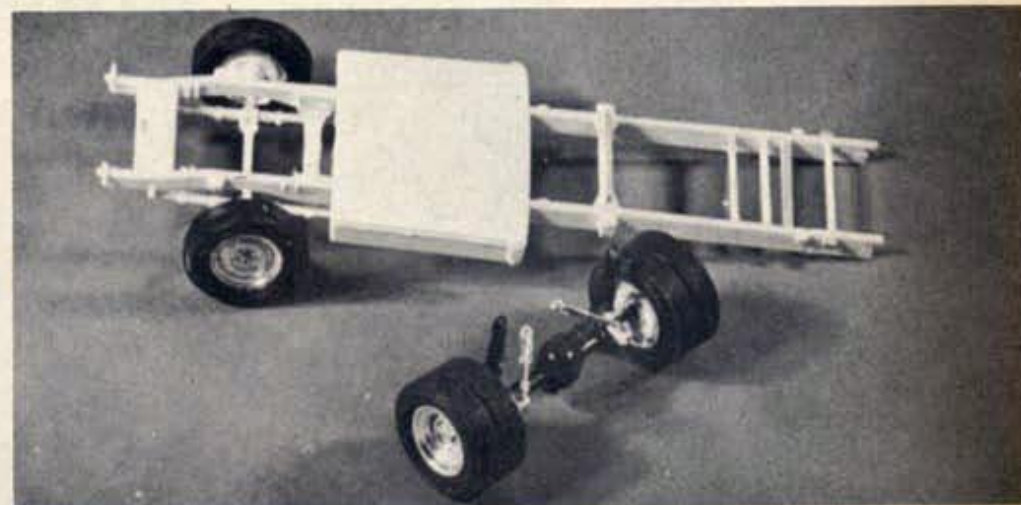
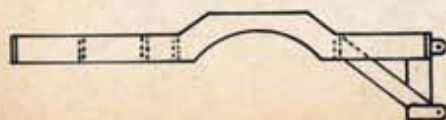
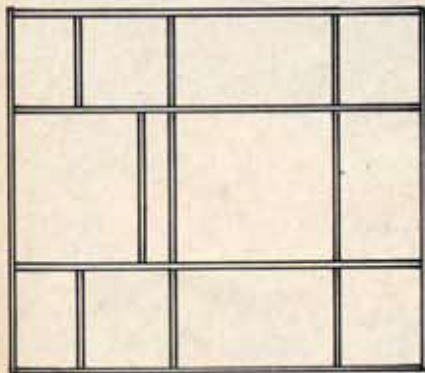


Axle housing must be shortened to maintain proper tread dimension as explained in text.

Correct installation of rear wheel assemblies. Brake backing plate with beveled edges on left, nesting inside offset wheel. Center is spacer and then outside wheel installed opposite to inside one.



Frame modifications are complete with installation of new cross members. Top edge is now flat. Rear axle assembly ready for installation. Shock mounts and spring pads are made of scrap bits of plastic.



Truck bed frame. Make outside rails with bottom radius as shown, center ones are flat and set on frame rails.

metal axle assemblies two inner wheels to axle, making sure that the reversed rim side is to the inside. Now glue wheel spacers in position and install the outside wheels with reversed rim to the outside.

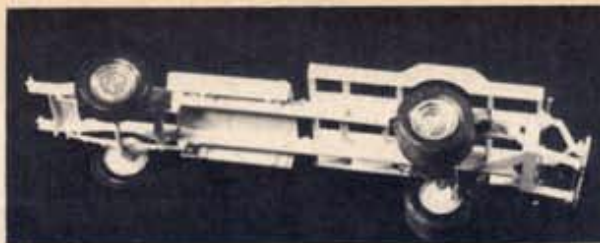
Next step is the rear springs. If you're using stock springs, they must be reduced in length to about $1\frac{1}{2}$ inches and should have approximately a $\frac{1}{8}$ inch arch. New mounting pads will have to be installed on the frame due to the increased wheelbase and the shorter springs being used; do this at the time of assembly. Glue rear springs to axle housing, be sure they are just outside and parallel to the frame rails. While they are drying, assemble the front axle, wheels and springs, following the instruction sheet and glue to the frame. Place rear axle assembly in position, axle center line now falls directly under cross member (see sketch). Slide frame up or down between springs until it is level then glue in place. Drive shaft will have to be lengthened accordingly, do this with a scrap from kit at time motor is installed.

Assembly should now follow the kit instructions up to but not including the pickup bed and rear fenders, these we will discard and build our own subframe to fit on top of the chassis rear section.

The sub-frame is built up using $\frac{3}{16}$ inch strips of .060 sheet styrene. I have found it is much easier to build as a separate item and then install to the chassis. In this way it may be held flat and square, then installed when glue joints have set. The floor is of .020 sheet stock cut to fit over the projection forming arches to clear wheels.

Additional research was required so we visited the local garage handling Auto Club emergency service where a wealth of detail information is available. All this has been compiled into a composite of the many trucks that were observed and is not intended to duplicate any individual item. They all differ in many respects, being custom built on a stock chassis, so go along with us or feel free to make any revisions you wish. I have yet to see two exactly alike in all respects.

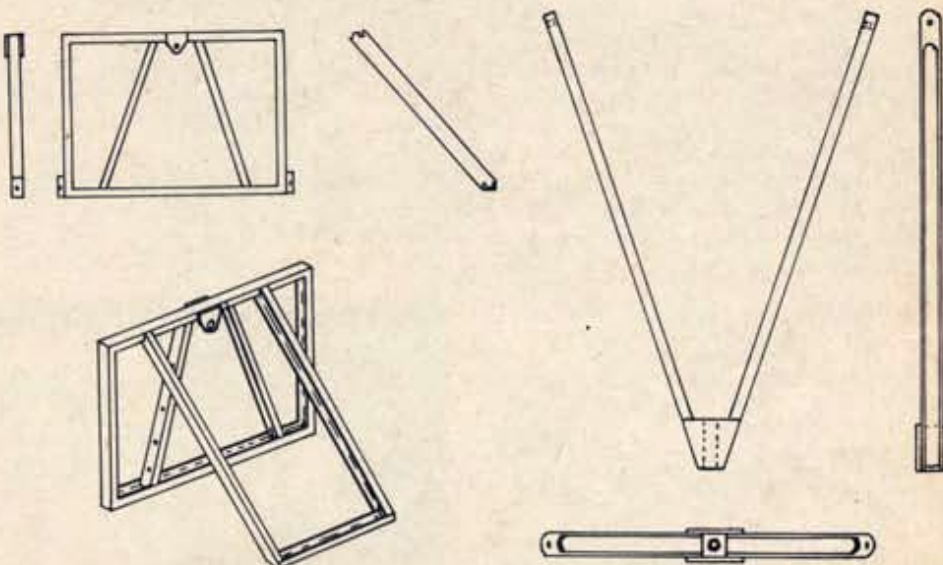
Some hoist units are made from a combination of channel and tubing; others are all channel stock, this is the method we chose. The channel is made by gluing $\frac{1}{16}$ inch strips of .010 stock to each side of a $\frac{3}{32}$ inch strip of .020 material, if this becomes a problem, use rectangular stock $\frac{1}{16} \times \frac{3}{32}$, not too much detail will be lost and it will be much easier. Common household pins were used as the pivot points for the hoist and pulleys. Drill an undersize hole in the stationary parts and a slightly oversize hole in the parts intended to move. The press fit on assembly will prevent their falling out and still allow



With framing complete, rear axle can be installed using radius on bottom to position properly.



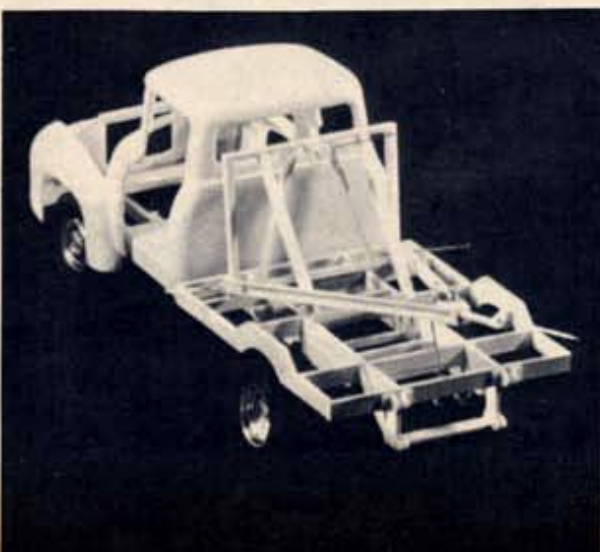
Bed is covered with thin sheet stock. Straight pins are used for pivot points of towing unit.



Hoist frame units are all of channel iron. These should be made of thin sheet stock. Drill small holes and use pins for pivots.



Hoist frame installed to truck bed, should be located directly above sub frame cross member as shown in Photo M.



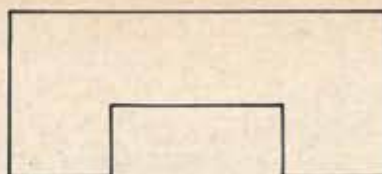
Proper location of hoist is directly above sub frame cross member brace located on side of wheel arch.

movement where it is wanted. The pulleys and hoist drum were made by chucking small bits of plastic in a drill motor and turning them down with a file and finishing with a rat tail to form the edge flange.

After parts have been painted (as you desire) and mounted on the bed, they should be rigged using a heavy silver thread to simulate the cable used on the real hoist. In operation the "V" frame is usually set at approximately a 30 degree angle to the horizon and all lifting or lowering operations are performed by the winch. These are usually operated by a power takeoff coupled to the transmission.

The hoist plate attached to the rear of the frame is free to pivot on the three links in a vertical arc. In use, it is attached to the car being towed by a system of links or chain, then the plate is raised lifting the attached end of the car off the ground. Its main purpose is to prevent sway either sideways or fore and aft, in the car being towed.

To prevent damage to some automatic transmissions that will not stand towing,



Sides and front of truck bed are cut from thin sheet stock. Align wheel cut-out radius with sub frame on installation.

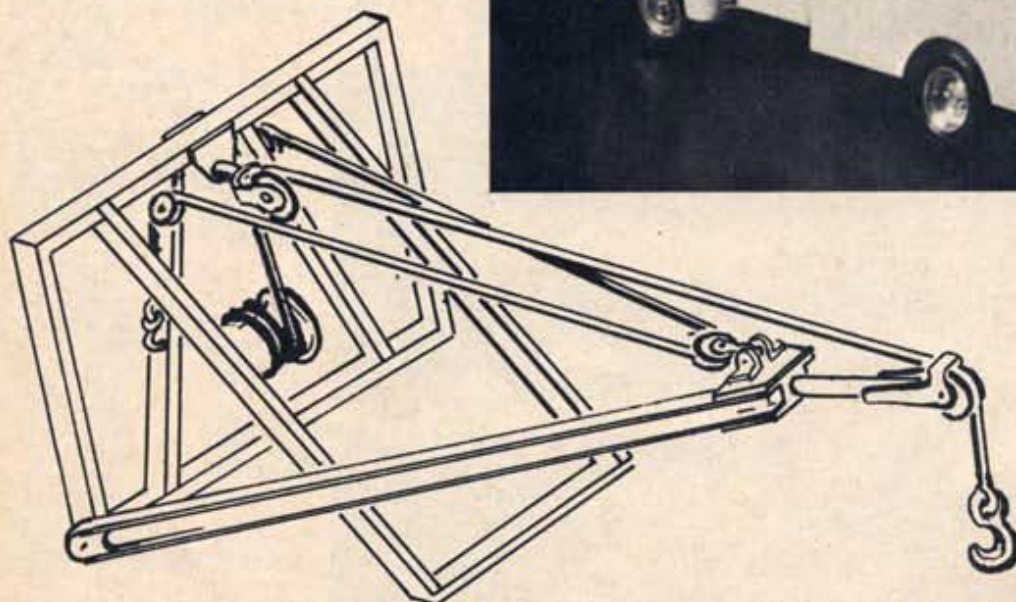
a rear wheel dolly is used. Ours is made up of six parts, the wheels are from a discarded model airplane of approximately the right scale. The beam and wheel cups are made of sheet stock. The wheel axles are of 1/16 O.D. rod over which the wheel cups hook. Adjustments for tread are accomplished by the tubing

which is a slip fit over the rod (1/16 I.D. tube in this case). In use they must be chained securely to the rear axle of the car being towed.

There are a number of small accessory items that can be added to this type of vehicle to add interest and eye appeal. We have chosen just a few to give you the idea:

1. A compressed air tank for fixing flats. This is a cut down gas tank from the Tweedy Pie kit.
2. Batteries for replacement or emergency starting.
3. Fuel oil and water cans (found in a number of kits).
4. A shovel and broom (there is usually some glass to clean up at any accident) made of scrap plastic.
5. Fire extinguishers (from other kits).
6. Caution lights — red lights (extra light housings are found in most all kits as custom parts).
7. Road side reflectors (made from small triangles of plastic with red tall lights from Revell kit C-1151).
8. Tools and hydraulic jack (revell kit C-1157). These are but a few of the

All the major items are complete at this stage. Painting should be done before final assembly.



Complete hoist assembly showing rigging. It can be raised or lowered by moving hooks in diagonal braces.

Wheel tow dolly parts and assembled unit. Unit is adjustable to fit variations in tread width and is chained to axle when used.



Hoist power unit details.



things associated with this type of vehicle and with a little thought you will be able to add an additional number.

As for painting and decorating, the sky is the limit in this area. Most any color or combination of colors will be authentic and there are many eye catching means of overall decoration without resorting to the custom treatment. Usually some form of Auto Club affiliation is displayed prominently as well as the type and kind of auto services rendered by the owner, his address and phone number. All this will add interest and appeal as well as complete your model.

The wealth of exterior detail is bound to attract comment from your friends as well as the judges when entered in any display. The number of items that can be made working should add points in any contest.

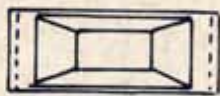


Hoist power unit assembled and ready for installation.



Additional details include broom, shovel, compressed air tank and highway reflectors.

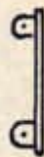
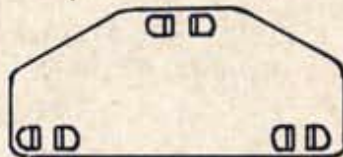
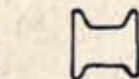
Hoist drum unit supports at top drum and power takeoff are shown below.



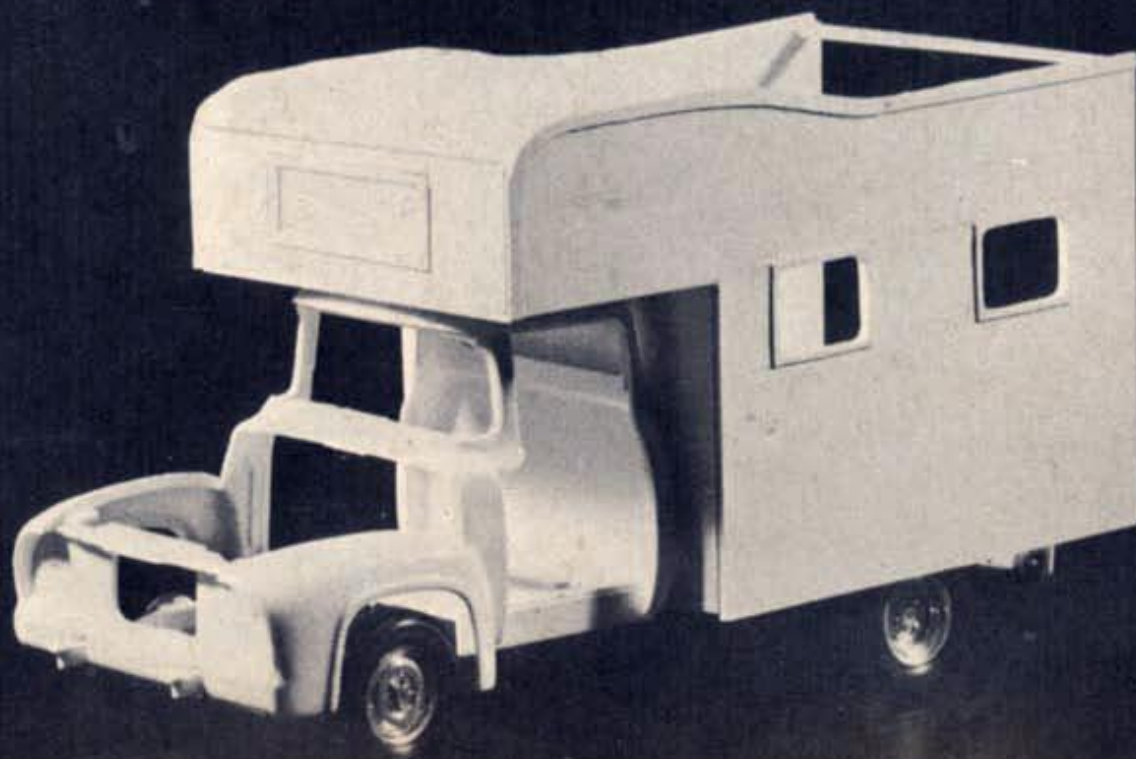
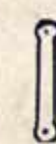
Tow dolly pan and wheel beam, two of each are required.



Hoist plate details, one of each are required. Coordinate with attach points on frame.

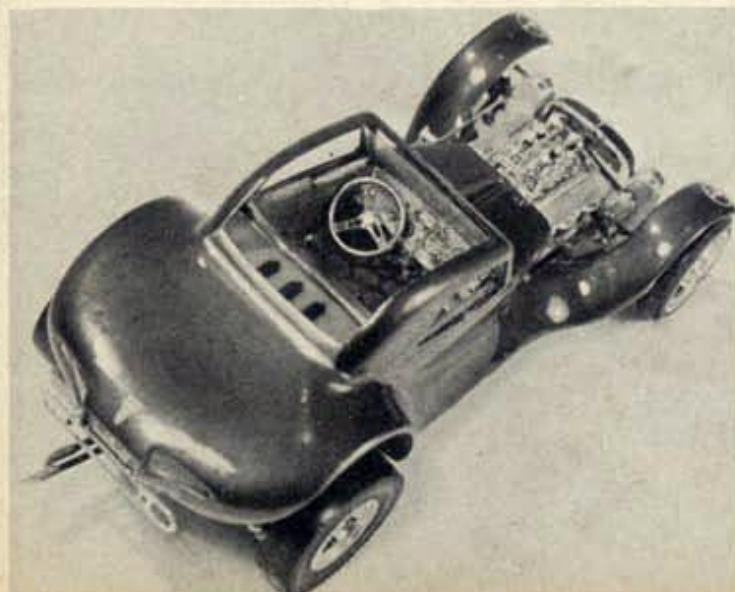
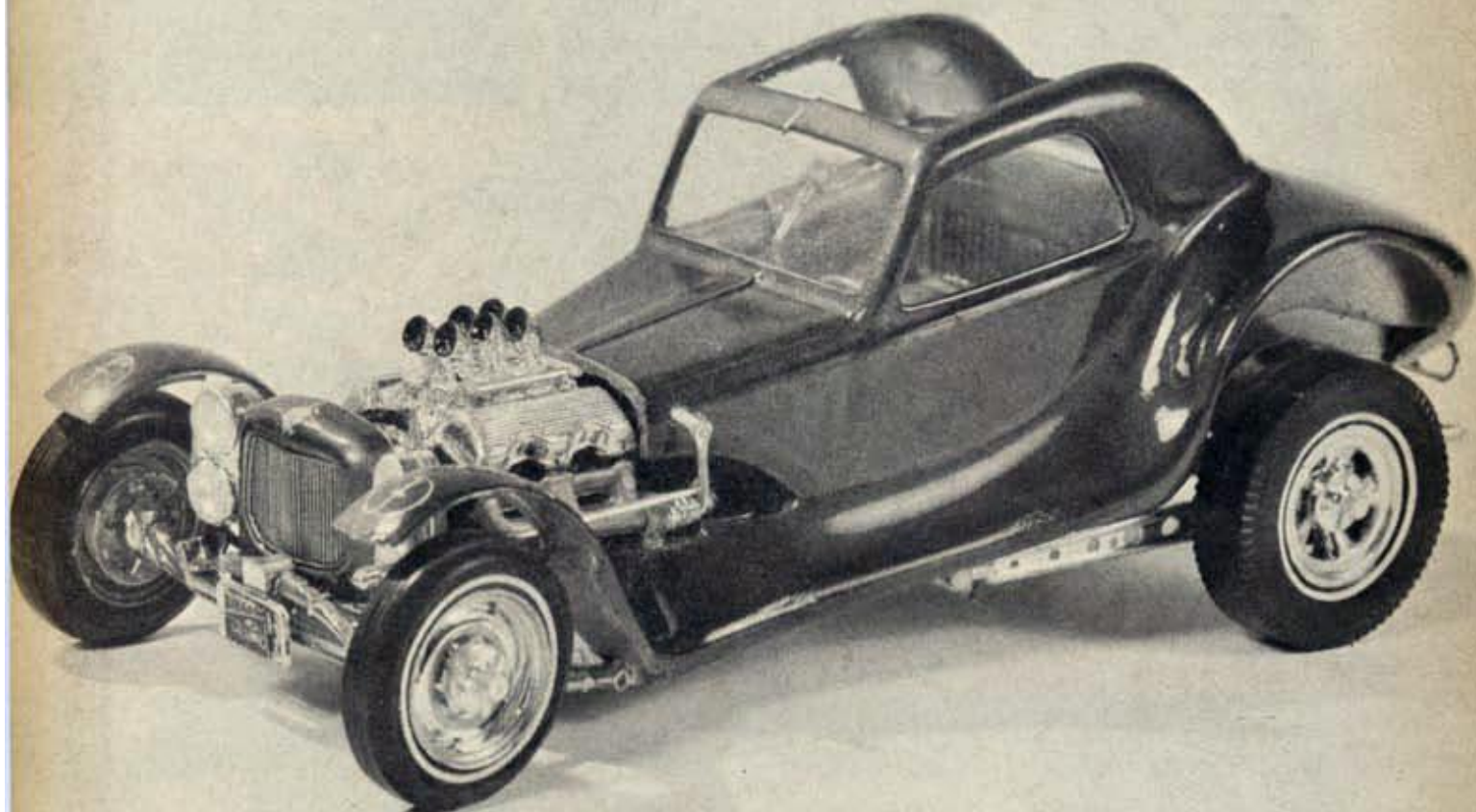


Should you prefer a camper to the tow truck, the same sub frame can be used. Start with something like this and complete interior to your own requirements.





CONTEST WINNERS



A '57 Chevrolet chassis with a Fiat coupe body wins this month's \$25 Savings Bond for Mike Benesch, 4034 El Vista Dr., Cleves, Ohio. The engine in Mike's creation is a big Chevy 409, while the radiator, grille, front axle and front wheels came from Ed Roth's "Tweedy Pie" by Revell.



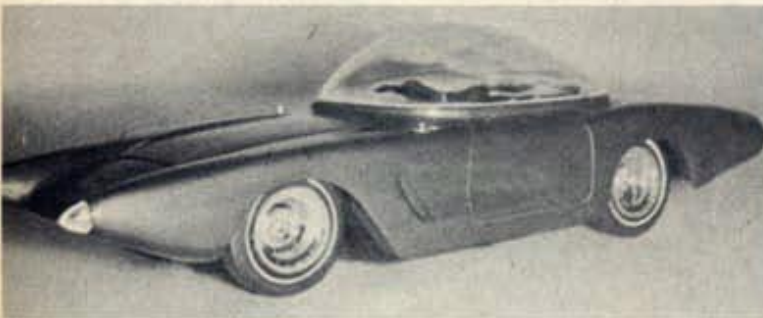
Craig Helm of Tulsa, Okla., credits two stories in the April issue of MCS, one on painting and the other on upholstery, for the handsome finish on his wild little Ford. Plenty of work went into the model.



With a pair of Pontiac V-8 engines from the "Attempt I," William Eden of Columbus, Ohio, turned this '40 Ford into a gasser and a half! Four coats of yellow paint finished the job.



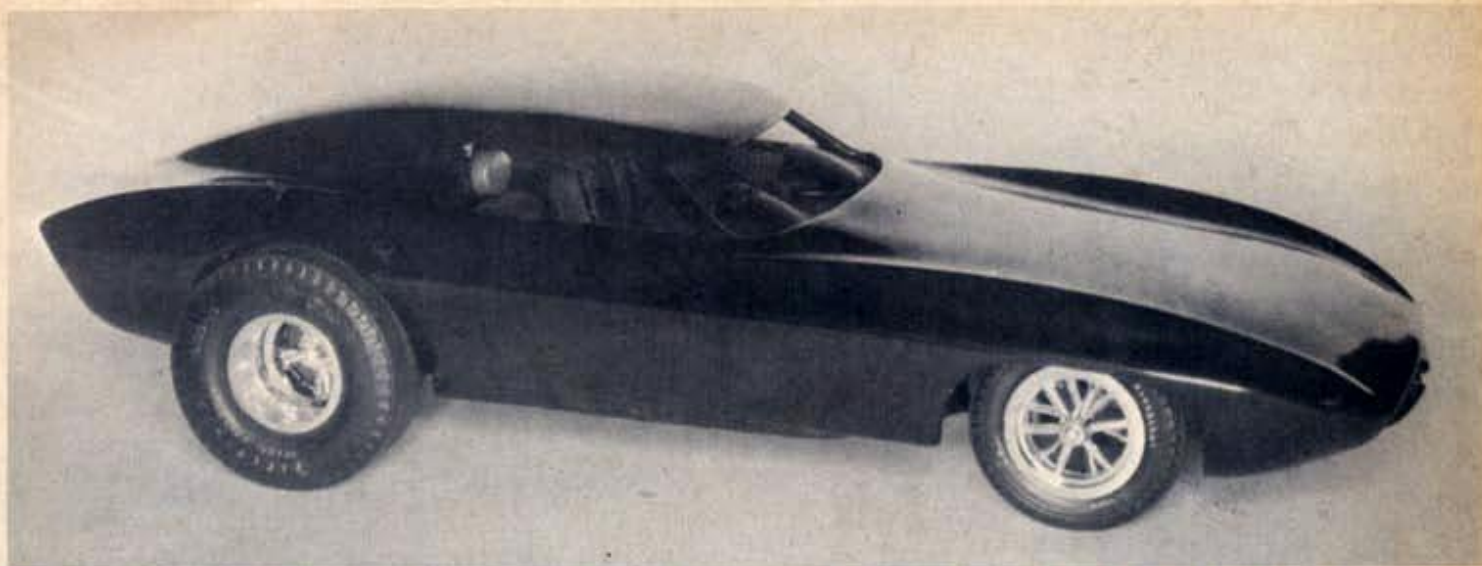
John Baldwin of Indianapolis, Ind., submitted photos of two fine models, the Falcon at left with full upholstery and a detailed undercarriage and the "T-Vette" at right, a unique combination of a '57 T-Bird front end and '62 Corvette rear.



The futuristic sports car at left started out as a '62 Corvette but, by the time Johnny Turner of Los Angeles was through, it had become a sleek rival for the finest dream machines. Plenty of putty was used.

Another bubble-topped Corvette, below and right, came from the hands of John Minors of Zion, Ill. John began with a '59 'Vette, added a '62 grille and dropped in a fully-wired '63 Cadillac engine. The hood hinges forward like an XK-E.





The Chevrolet factory could take a few cues from this wild Corvette built by Derek Riley of Santa Clara, Calif. Derek started with a '63 Sting Ray by AMT, chopped, lowered and molded it and then applied ten coats of black gloss enamel.

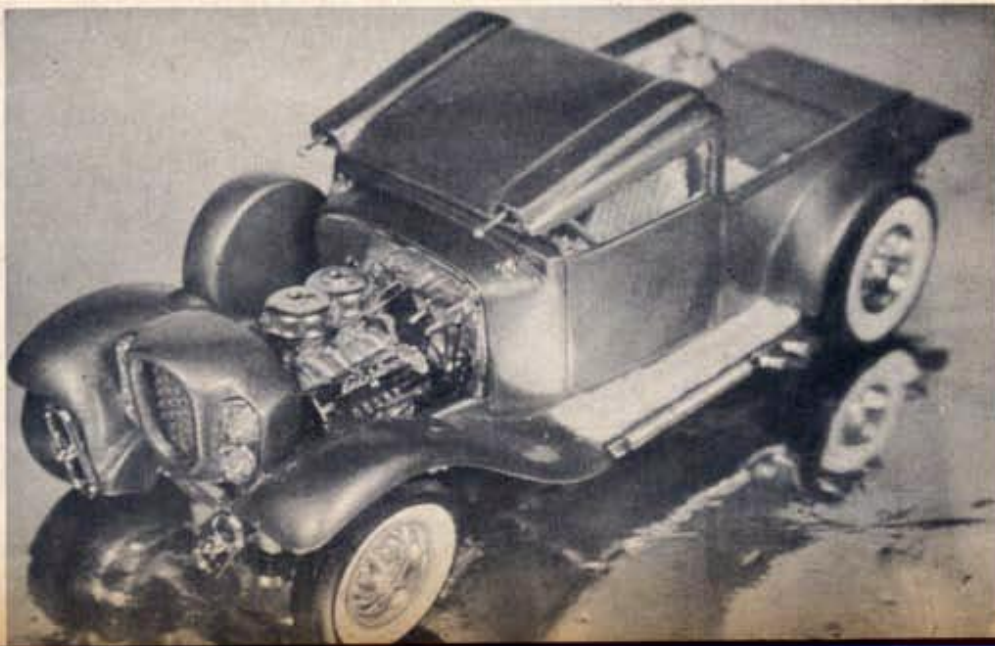


The popular '53 Ford pickup was chosen as the basis of this fine model by Dean Lawrence of Katonah, N.Y. Working with an AMT kit, Dean perked up the vehicle with a fuel-injected De Soto engine.



Another entry by Dean Lawrence of Katonah, N.Y., is this Chevy II Nova, built from the AMT kit and set up for drag racing with an injected Chevy powerplant.

Jim Dooks of Vancouver, B.C., Canada, calls this model the "Aristocrat." It's an AMT '34 Ford pickup with Ala Kart grille and dual four-barrel Dodge V-8.

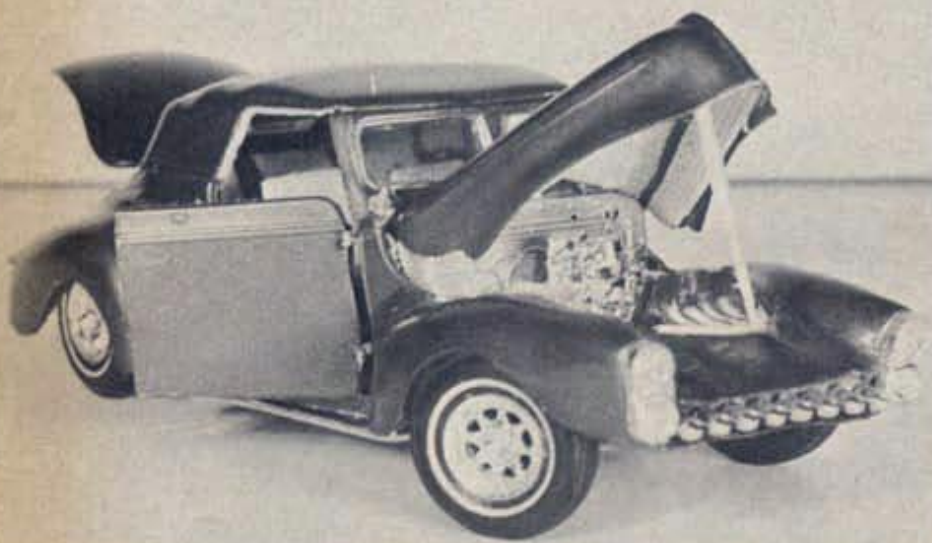
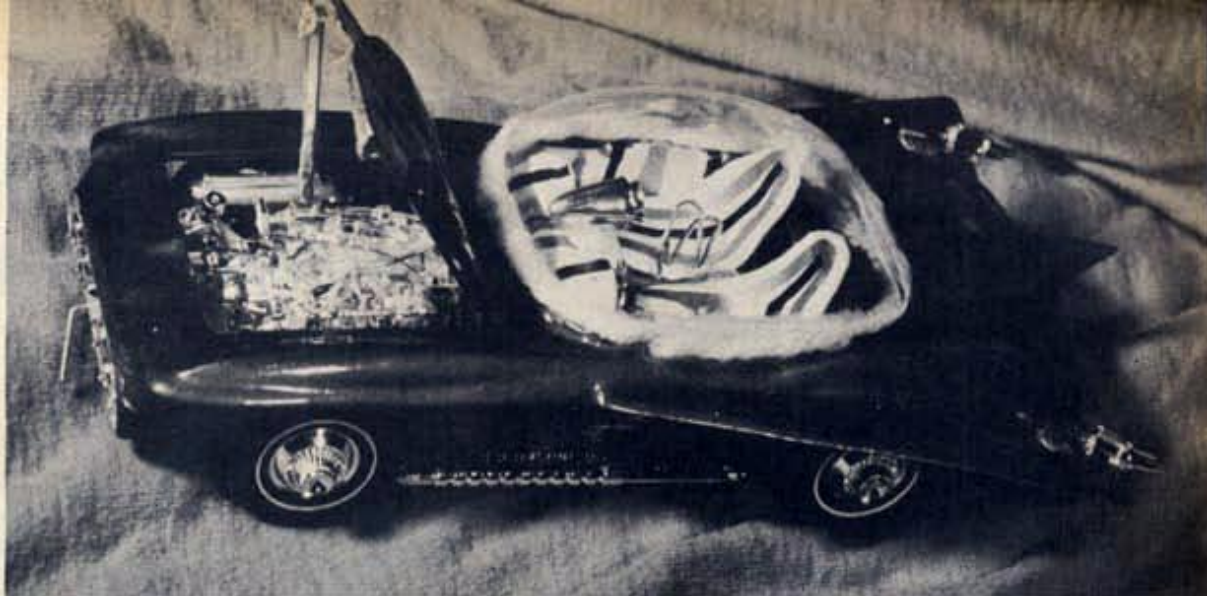


Warren Hibbard of Anaheim, Calif., blended parts from three famed sports cars, a '59 Corvette body and chassis, a Jag XK-E engine and a Ferrari front end.



A Revell custom grille was grafted to a much-modified AMT '40 Ford by Gerald Gerken of Albuquerque, N.M. A Ford 390 engine by AMT is powerplant.

Another of those popular Corvettes, this one a '63 by Sheldon Cousins of Toledo, Ohio. A Revell turbine engine adds unique touch.



Robert M. Tadayesky of Bethlehem, Pa., submitted a '40 Mercury with a '57 Chevy 283 engine, fully wired and completely chromed. Candy wild cherry paint is matched by red and white cord interior.

Here's a sleek roadster that's come a long way from its origin as a '40 Ford coupe. George Zwouski of Rochester, N.Y., added a '63 T-Bird tonneau cover and a wired '57 Chevy V-8 engine.



Once again, the combination of an AMT Corvette, in this case a '62, and a Revell bubble top results in a fine model. Steve Music of Glen Rock, N.J., was responsible for this example.

a MODEL CAR SCIENCE Contest

FOR MODELERS EVERYWHERE . . .



Each month the editors of MCS will select, from PHOTOS submitted, the top model car. It will be shown on these pages and its owner will receive a \$25 U.S. SAVINGS BOND

SEND A PHOTO OF YOUR PRIZE MODEL TODAY TO:



MODEL CAR SCIENCE

Contest Editor

171 So. Barrington Pl.
Los Angeles 49, Calif.

You may submit as many entries as you wish. Send photos only, please. NO KITS. Include your name, address, age and information on how you built the model. Only CAR models are eligible. We cannot return any photos submitted.

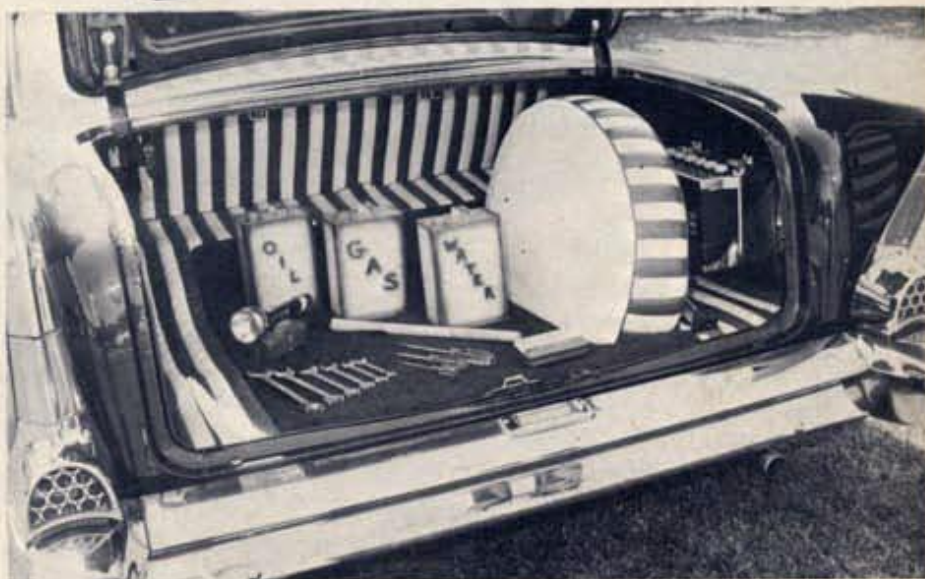
GREAT CUSTOMS ...and how to



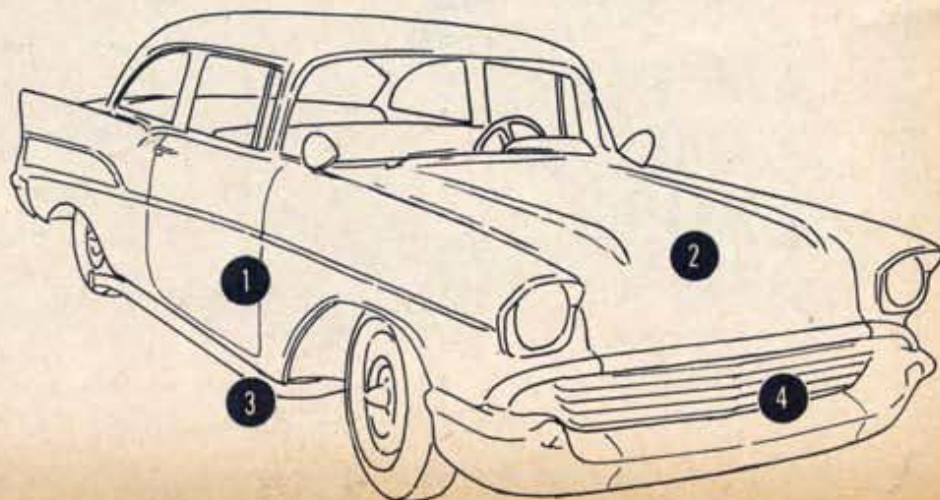
TEXAS CHEVY

Bucky Ketcherside's mild custom boasts an unusual feature in that the whole car was assembled from the frame up. Power for Bucky's '57 is a Chevy 327 incher. This car is extremely low.

Revell's '57 Chevy would be the best choice for building this car. The first thing to take into consideration are the hood scoops. These have had the chrome ornament removed, and have been filled and molded to the hood. Many putty applications and sandings will be required before the desired effect is achieved in model form. When lowering the front end, follow the article in the December MCS on "Lowering the Late Model," it's on page 21. The rear end is lowered by dearching the springs. This is done by gluing the rear end assembly in place then heating the springs gently. This will lower the rear end greatly. Remember to use heat sparingly so as not to melt the plastic.



1. Body, frame and main components are Revell '57 Chevy kit
2. Engine—Revell '63 Chevy Sting-Ray engine kit
3. Lakes pipes — AMT custom kits
4. Tube grille — Revell custom grille kit.



AND HOT RODS build the models



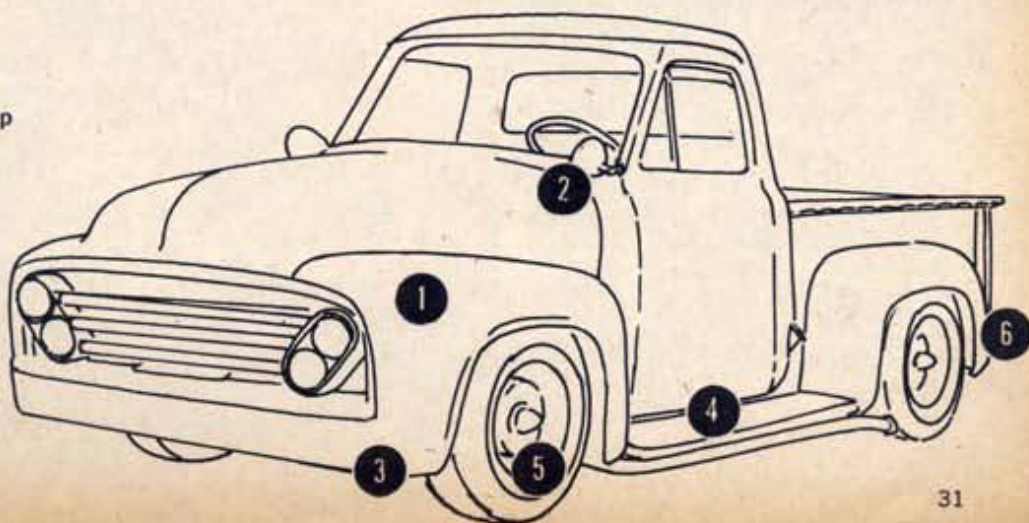
FANCY FORD FREIGHTER

Jake Nelson's '53 Ford pickup has had much restyling done since it left the production line. This truck is finished in rust metallic lacquer, trimmed with copper colored scallops. Neatly contrasting running boards are done in chrome.

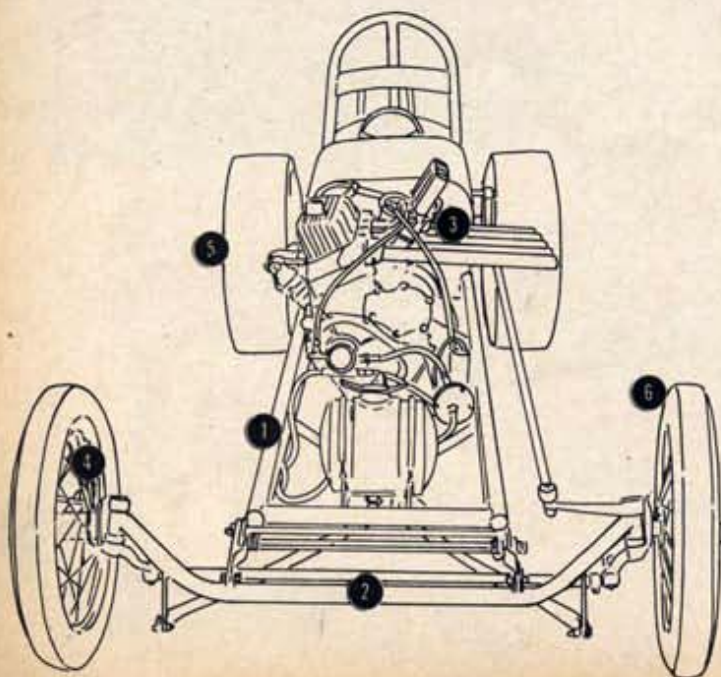
Basic kit for building of this truck is AMT's '53 Pickup. To lower the truck slightly, heat the springs with a match just enough to take out some of the arch. Use Revell's dropped axle from the '56 pickup, for a further drop. Grille assembly is contained in the AMT kit. Front pan will have to have the bumper bracket holes filled with putty and sanded smooth. Rear end uses filled tailgate and rolled pan from the '53 pickup kit. Taillights can be adapted from AMT's Ala Kart. Drill out area for taillights and file to final shape, checking every so often for fit. Remove door handles by using a sharp X-acto knife, then sand smooth.



1. Main components for building truck are from AMT's '53 pickup kit.
2. Spotlights — Any AMT custom kit
3. Dropped axle — Revell '56 pickup kit
4. Chromed running boards use wide chrome tape available from Auto World
5. Chrome wheels are from Revell '56 pickup.
6. Taillights — AMT Ala Kart



on the SLANT



Drag racers are always trying something new. The Dragmaster team is no exception. Pictured here is their Dodge Dart Slant Six 225-cubic-inch engine. Car usually runs "C" dragster, it has set a 1320 record for "D" dragster. Car is from Carlsbad, California which is near San Diego.

Color of dragster is a light tan with a red stripe lined with white down the cowl.

The engine will require the most work in the building of this car. The one used here is from the AMT XR-6 kit, headers and injection are from AMT's 1962 Falcon and Comet kits. Patience is the only other requirement to get everything to match up correctly.

1. Frame — Revell Dragmaster frame kit
2. Front axle, draglink, suspension
Revell dragster speed equipment
3. Headers and injection — AMT
Falcon and Comet kits
4. Wire wheels — Revell mag wheel
kit
5. Rear mags are American Racing
from Revell mag wheel kit.
6. Slicks and motorcycle wheels from
Revell competition tire kit.

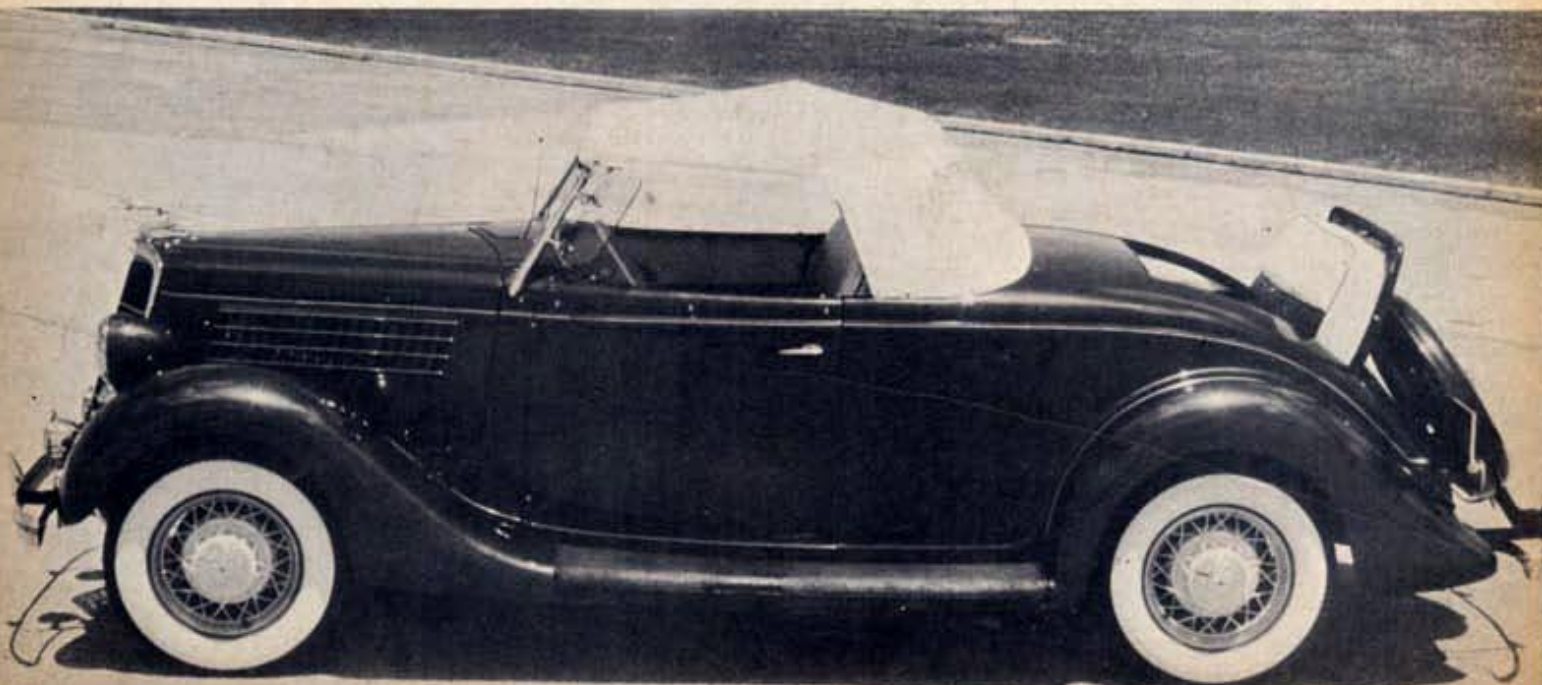
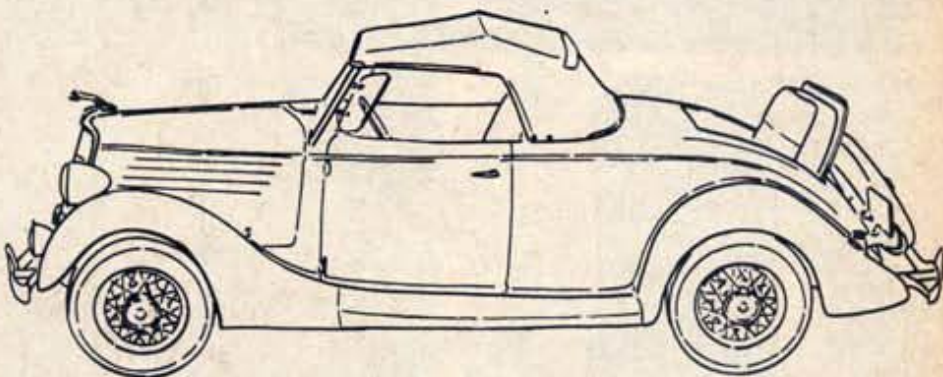
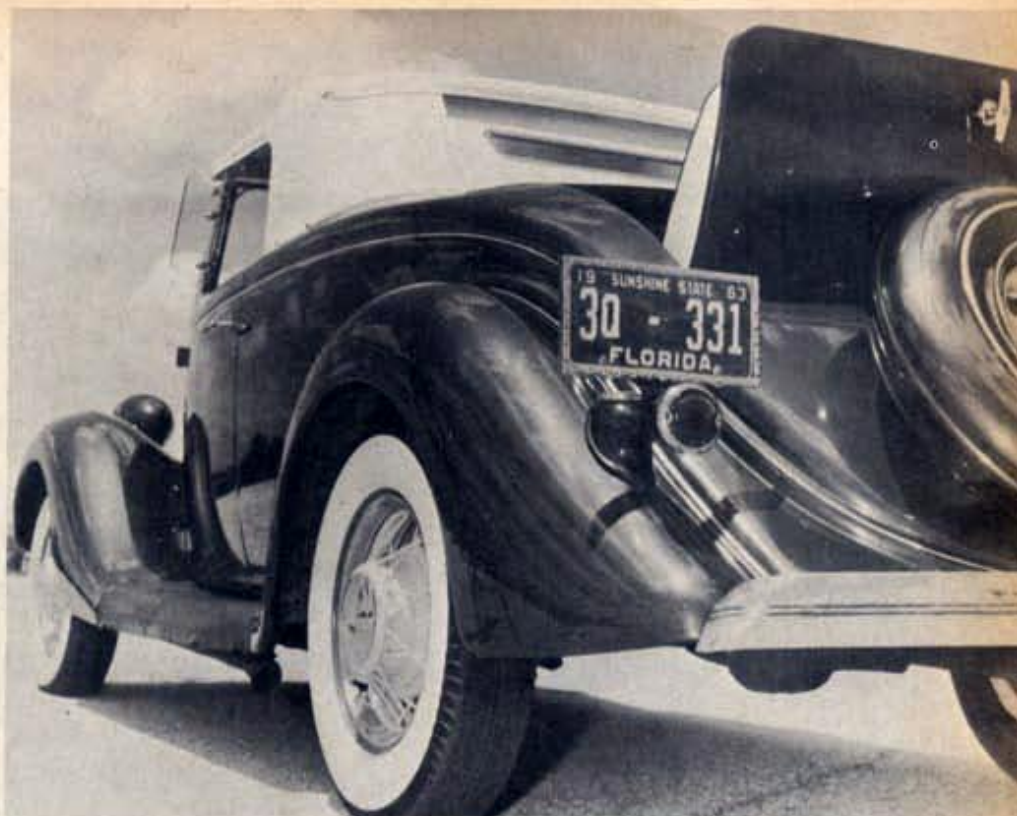
FRED'S FAST FLORIDA FORD

This exceptionally clean '36 Ford is the second family car of Fred Stead of Tampa, Florida. This little roadster was built at cost of less than \$1200. Power is derived from a Thunderbird V-8. Body color is Mandarin Red, which has been rubbed to a high gloss.

Best kit to use for the construction of this model for your collection is Monogram's '36 Ford. Use the roadster version of kit. Top would look most authentic if sprayed to simulate white canvas. Use the wire wheels included in kit or AMT's '57 Bird wheels can be substituted. T-Bird engine from AMT is best to use for powerplant in your model version. This engine is completely chromed, therefore block should be assembled first and painted a gloss white, then the chrome accessories such as pan, valve covers, intake manifold, etc., should be cemented in place on engine.

Car can easily be built in a couple of evenings.

1. Body, frame, top and wire wheels are all to be found in the Monogram '36 Ford kit. (AMT T-Bird wire wheels are optional)
2. Engine is AMT T-Bird modified according to text.



Styling Tips

SIMULATING WOOD ON YOUR MINIATURE

by BOB WAGNER

Many times a modeller wishes to simulate a wood finish. Until recently this has been virtually impossible, except through the use of paint, thin balsa or plywood. Even then the results were seldom satisfactory. A new product has recently appeared on the market known as wood contact paper that is not only easy to work with but also is inexpensive.

This paper goes under the name Con-Tact, instant decorating paper. Price is a low \$.49 per yard and it is 18" wide. It is a self adhesive vinyl plastic. Con-Tact is also available in tape form at \$.25 for 3/4" wide by 108" long, and \$.49 for 1 1/2" wide by 108" long.

Several different types of wood finish are available, both in tape and sheet, namely; 483E Antique Pine, 447E Walnut Redwood, 130E Knotty Pine, 114E Woodgrain Blond, 173E Dark Wood, 170E Light Wood, 180E Mahogany, and 528E Teak.

This paper is readily available from hobby shops, hardware stores, variety stores, and some large super markets stock it in their home shop departments.

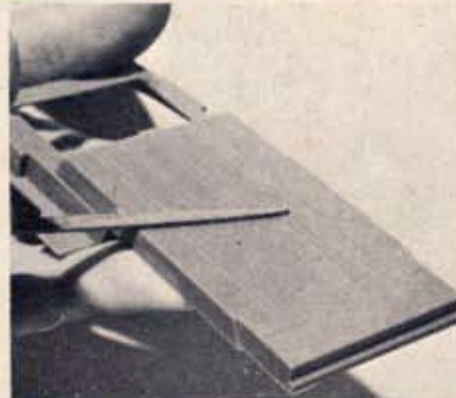
Con-Tact is simple to apply requiring just three easy steps; 1. Cut off to fit 2. Peel off backing; 3. Smooth onto surface.

In the pictures we have illustrated two projects for which Con-Tact can be used. There are many more; you need only let your imagination take the lead. One idea not shown is for wood paneling of custom boats pulled by your custom miniature.

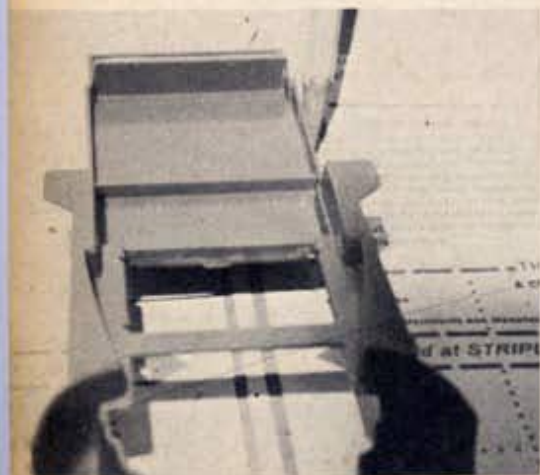
One of the most prevalent places one finds wood on the full size prototype is in the beds of custom pickups. Doing this in miniature is now a simple procedure. First step is to remove the existing



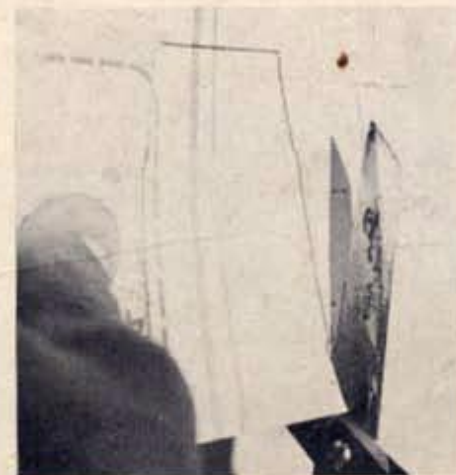
1. Wood Con-Tact paper comes in both rolls and sheets.



2. Remove embossed runners from bed with a file.



3. Draw a rough pattern on backing of Con-Tact paper.



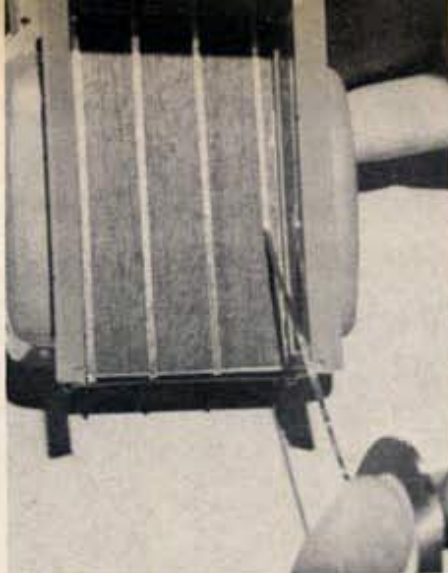
4. Cut paper with scissors.



5. Test fit paper to bed.



6. When paper fits perfectly to bed smooth with fingers.



7. Add 1/16 chrome tape to simulate runners.



8. Finished bed with wood in place and chrome runners.

embossed runners in the bottom of the bed that is to be paneled. Runners are removed either by cutting away with a sharp X-acto knife or by filing. Area is then sanded to a fairly smooth finish, being sure that none of the runners remain. A rough pattern is then drawn on the backing. Cut this portion out with scissors. Test fit it into bed, more than likely some trimming will have to be done. Remember to remove a little less than you think needs to be removed; it can always be trimmed again but once it

has been cut too much, pieces can not be added on. Test fit after each trimming. Once desired fit is achieved, remove the backing from Con-Tact and apply to surface, working with fingers from one end to gain a smooth fit. If any trimming needs to be done after paper is in bed this can be done carefully with an X-acto knife. For a high luster, spray a couple of coats of AMT clear lacquer over the wood. Let clear dry thoroughly, add chrome tape, 1/16 wide, to simulate chrome runners and as simply as that

you have a custom wood finish to your pickup bed.

Another idea is simulating a wood firewall for a miniature roadster. The wood tape is the best to use for this, 1½ wide. Cut a piece of tape a little larger than firewall, remove backing, apply to firewall. Be sure grain is straight. Trim tape to shape of firewall with scissors or a sharp X-acto knife.

These few ideas should really set your imagination rolling for other uses of wood in miniature rods and customs.

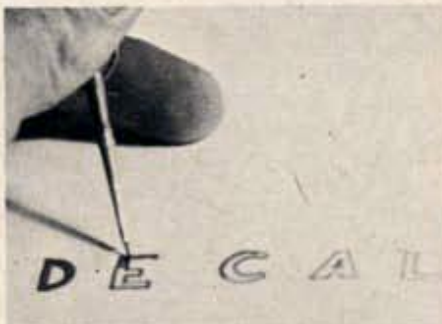
MAKE YOUR OWN DECALS by Bob Paeth

Here's a good example of an imaginative customizing twist. The "paper" you see being used here is blank decal paper. Best source for this paper is a stationery store.

Why, you ask, should you make decals when so many are available in the model kits? Simple! No matter how many decals are manufactured, there will always be names or words that are not available, your own name, for instance. For example, suppose you have your model finished, including a flawless paint job. It may be a '41 Willys competition coupe and you want your name on the door as the driver. If you try to paint your name by hand you could "goof" and to change that goof would ruin that paint job. But if you make a mistake on the paper, you just start in another place. It is also easier to paint your name on a flat surface rather than on the door or trunk of a car.



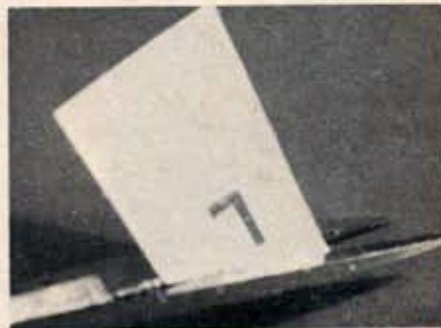
1. First print the name wanted using guide lines to make sure the letters are of equal height.



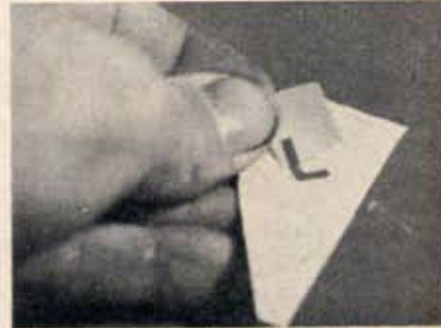
2. Space is not important, as the letters are removed and applied separately. Take care in painting the letters.



4. The only change in applying this decal is the amount of time for soaking. About 20 minutes are needed.

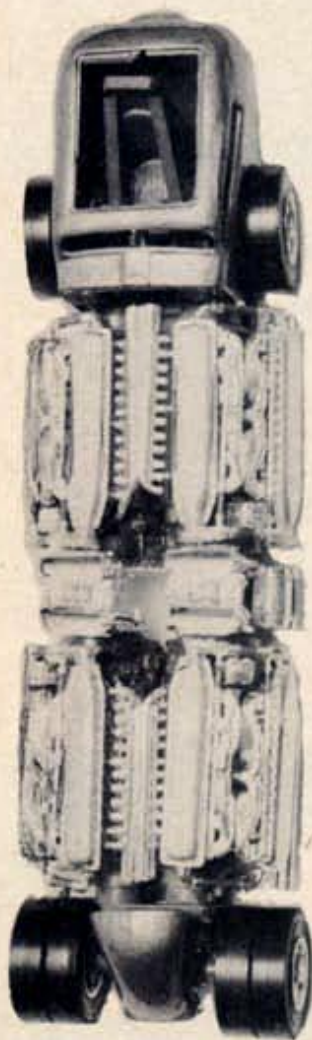


3. Cut the letters out separately with scissors. Make the piece large enough so it can be handled easily.



5. When sliding letter from the paper, extreme care must be taken. The paint is thin and will tear easily.

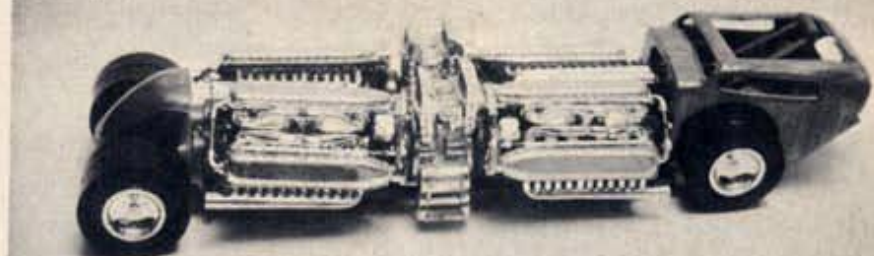
By Ralph Guldahl, Jr.



This 4-Allison dragster will be scaled up to a full size Competition machine.



QUAD A-1



It takes a midget to perfect a giant, might read the prelude to this little opus. In illustration, this model of "Quad A-1" was built by Jim Lytle to serve as a prototype in determining the overall appearance and feasibility of such a machine before actual construction of the genuine article.

The body is a drastically altered Fiat coupe of "Topolino" derivation, while the nose is of the same order, but canted at a sharp angle. Engine angle is determined by the exhaust manifolds at the top and the engine mounts at the bottom. They're joined by the dual spacers for the flywheel assemblies.

Construction wise, the engines were built and joined in pairs, then as a second step, the body was chopped and a new tail section added. Quad A1's frame was built up from 1/3 in. balsa, including the roll cage. In a machine that is virtually "all motors," naturally the length of the joined Allison's and axles determined the wheelbase. To complete the package, offset differentials and dual slicks were utilized.

"Trick" paint jobs are of no value on a prototype, so Jim grabbed the more conservative paint cans off the shelf, resulting in grey engines and frame, metallic blue body and nose, and a red chute pack and seat.

FRAME AND RUNNING GEAR

Now let's go a little further than the model prototype, and catch a glimpse of the projected real Quad A1. Dealing in basics, the car is essentially four Allison engines joined — all this in a 105" wheelbase. Each pair of engines will be mated by diesel truck flywheels and the starter ring gears will be meshed. A six disc clutch will be used on each pair of powerplants, joined to a Pontiac axle with 2.0-1 gears. For sturdiness, a 14" tube will join engine and differential into one solid unit. Rezeppa joints will be united to the front axle for steering. The steering box itself is located in front with the steering shaft extending between the engines back to the roll cage. By using this design, drag link whip is eliminated. The monster will be shod with dual 10-1/2 in. rims and 10-1/2 in. x 16 in. slicks all around. The roll cage will be made separately and joined as an individual unit, completely contained behind the rear axle.

Handling four engines with two clutches and twice the amount of throttles would be a thankless task for us unfortunate bipeds, so it's all solved with one clutch pedal controlling the two clutch assemblies and one gas pedal will regulate the four carburetors. Bringing this creature to a halt will depend upon rear brakes only and, of course, a huge drag chute.

THE BODY

Lytle plans to first fabricate a prototype body from plaster and wood and then make a fiberglass female mold followed by the actual fiberglass body. The same process is indicated for the nose section. The driver's seat is also of the lightweight material.

The Quad A1 is designed for the drags, but with a full body it could be used flat out at Bonneville. The latest word from Jim is he's located three more Allison's in Ontario, Calif., and plans to initiate construction at once.

The casual reader may suppose that Jim Lytle would regard a ride in this behemoth as a "little scarier than the freeway," but 190 mph speeds don't phase him at all. What does is, "Getting crushed between two of these gigantic mills during construction!"

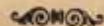


TABLE TOP RACING SECTION

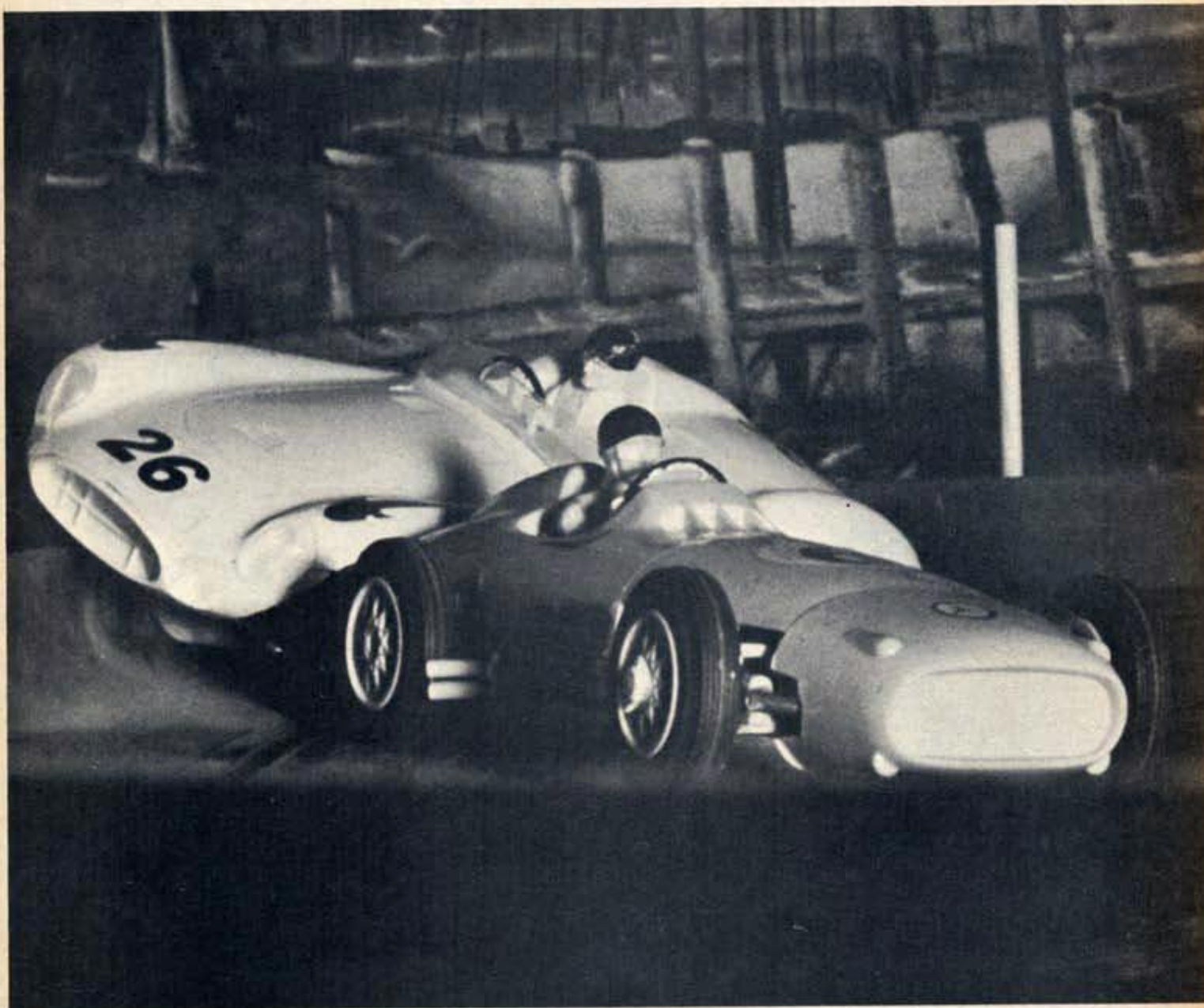


PHOTO CONTEST

Each month Model Car Science will award valuable prizes to the readers who submit the best photos of slot racers in action. Send your photos to: Table Top Photo Contest Model Car Science, 171 Barrington Pl., Los Angeles 49, Calif.

**THIS MONTH'S
PHOTO CONTEST
WINNER IS**

**RANDY STADTMUELLER
109 W. CECIL ST.,
NEENAH, WISCONSIN**

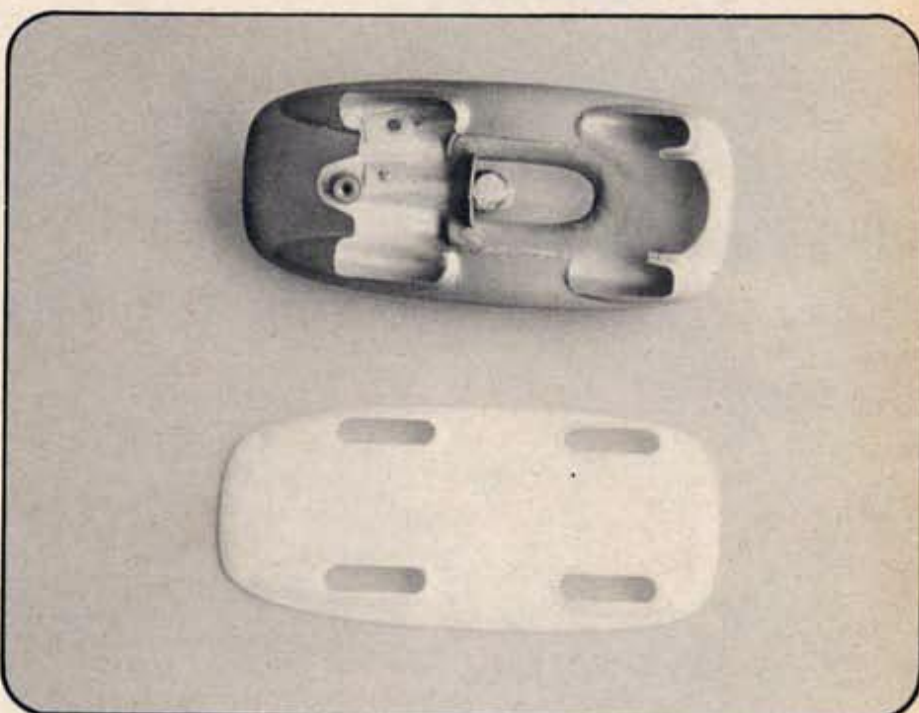
THINK SMALL

(OR) MOTORIZING A 1/25th GO KART

Rear frame section is narrowed by removing stock at center line. Bracket described in text holds everything in alignment and is used to install body.



Small size of go-kart leaves little excess room but everything fits. Front frame section must be trimmed to clear motor magnet.



Wheel openings must be enlarged slightly and center section removed to allow chassis installation. Body is held in position by tabs on sides that snap into slots on frame side rails and by boss installed at rear.

This was just one of those things that started out as a joke. Looking at the kart that's packaged with AMT's '63 Ford Pickup, the first thing we noted was that the wheel blisters are large enough to perhaps enclose a 1/32nd wheel and tire by sanding a little off the tread. They'll fit close, but they go. The conversation between the two geniuses working on this brain child went something like this: "Now how about power? Not much room. The Revell SP500 is O.K. for length but too fat, no good. Say, how about that Strombecker chassis over there? Take the motor out and try it. Looks somewhat tight. Got a smaller axle gear? Mmmmm, might work if we hang the front axle on the end of the motor. Well let's get busy. What can we use for a frame? No, the Strombecker is too big. Think small, what have we got that may work? Well don't you want to see it run tonight? Yes but! Well you donate the Revell frame and I'll put in the wheels, tires and motor and we can have a ball tonight, O.K.? Fine, let's go!

From the tire openings in the bottom pan it looks like we will have a wheel base of 2-1/16 inches and a tread of about 1-3/8 inches, so let's start in. First of all, the frame will have to be shortened so cut off some from both sections until we can arrive at the proper wheel base. O.K. got it, but I think it's a little too wide. Well let's cut the rear section at the center line and slide the parts between the front section and the motor as there is a small gap at this point. Hey it fits just right, but how do we support the rear end of the motor, none of the frame brackets will fit now. Not much room is there? We should tie in both sections of the frame at

the same time. How about cutting a piece of brass that will just fit inside the frame and long enough to bend at a right angle? Drill a hole in the short flange to fit the brass around the motor shaft which will take care of support and alignment of the motor, then drill two small holes beside the gear opening to hold the sides. That sounds good, you bend it up while I open up the body pan so we can make a trial fitting. Say, while you're making that bracket why don't you add some tabs on the sides of the short flange to slip in the frame side slots to hold the ends of the front section as there is no room to add screws. Well it sounds like the best way to hold them in place. What do you know, it almost fits, but we will have to put the wheel jamb nuts on the outside to hold the tread dimension. I'll do that while you open up the front a little to clear the pick up guide. Say I just had an idea, why not turn the back section over top to bottom and leave a tab on the back of our homemade bracket, drill a hole in it and use it for mounting the body? Like crazy man; and add a couple of pieces of scrap plastic to the underside of the body to hold the front in proper position would be the easiest way.

Well hurry up and glue the body together. I have a can of that new A.M.T. Wild Cherry paint I want to try on it. What, no gold base? Use silver instead, it should look O.K. That's it, stop right there! Let's get the big jobs ready while the paint is drying, then slap some numbers on it and go racing."

They did — why don't you?

BIG PRIZES OFFERED

AT EASTERN TRACK ✦

by Gene Clement

Cliffhurst Raceway in Wilkes Barre, Pennsylvania, is a sporty course with big plans for big prizes.



First Place Award in the up and coming Grand Prix race at the Wilkes Barre, Pennsylvania, Cliffhurst Raceway on July 18 and 19, will be an honest-to goodness, full size Austin Healey. Entrance fee for this event will be \$12.50 and if it is successful, we should be seeing more big prizes being offered to slot buffs in the near future.

Along these lines, there is at present a 190 foot, five lane commercial track under construction in Connecticut. The promoters of this track are planning to give away a color TV set to the first place driver of the race which will take place the last Sunday of each month. Entrance fee for these races will be four dollars, and it will be necessary to first qualify with ten consecutive laps of under 17 seconds per lap. This is to assure better driving and more red-hearted competition, and to avoid getting the cars strung out along the track. This project is still "under wraps," and there are some new controllers being produced for this track that will be solid state and sell for eight dollars.

Meanwhile, in Wilkes Barre, Pennsylvania, 286 Kidder Street has grown in popularity and is becoming the center

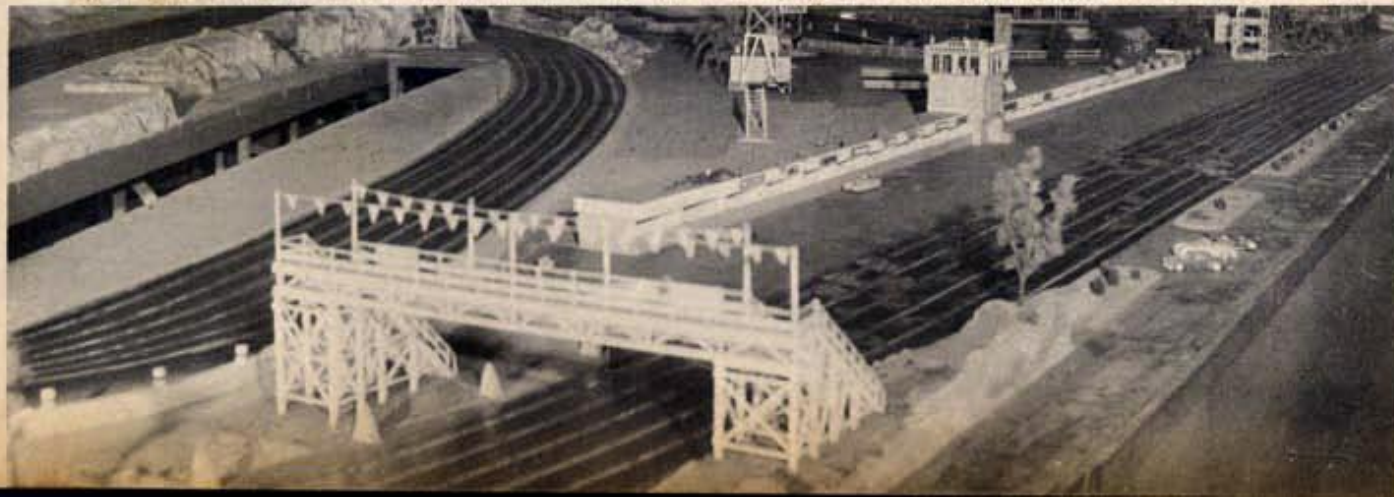
of "1/25th Land" in the east. This course, while it has more right hand turns than left turns, is definitely a drivers' track.

In the most recent competition at this track, the engines ran in different classes: C/M, D/M, E/M and GT. The first letter (C,D,E) indicated class and the M stands for Modified. C Class motors were unrestricted except that the maximum list price of ten dollars was set. D Class motors were restricted to DC-703, DC-704, and DC-705. The 705-X was outlawed in this race. The motors in E class were in line only, as follows: Pittman DC-60, 62-B, 63, 65, 65-A, 70, 71-B, 81, MX-63, Revell Pittman 77, Wilson 875-C, Kemtron X-503, and Mabuchi SP-500. GT Class was open.

There were very stringent rules and regulations sent out to all contestants for this Eastern Model Racing Association Grand Prix Race and very few of the cars entered complied. Some of them had wheels sticking outside the body; several cars were so constructed that the two front wheels did not touch the ground. In general, many of the cars did not approach realism.



This is the track where the race for an Austin Healey will be held. The A-H will be first prize for the Grand Prix winner.



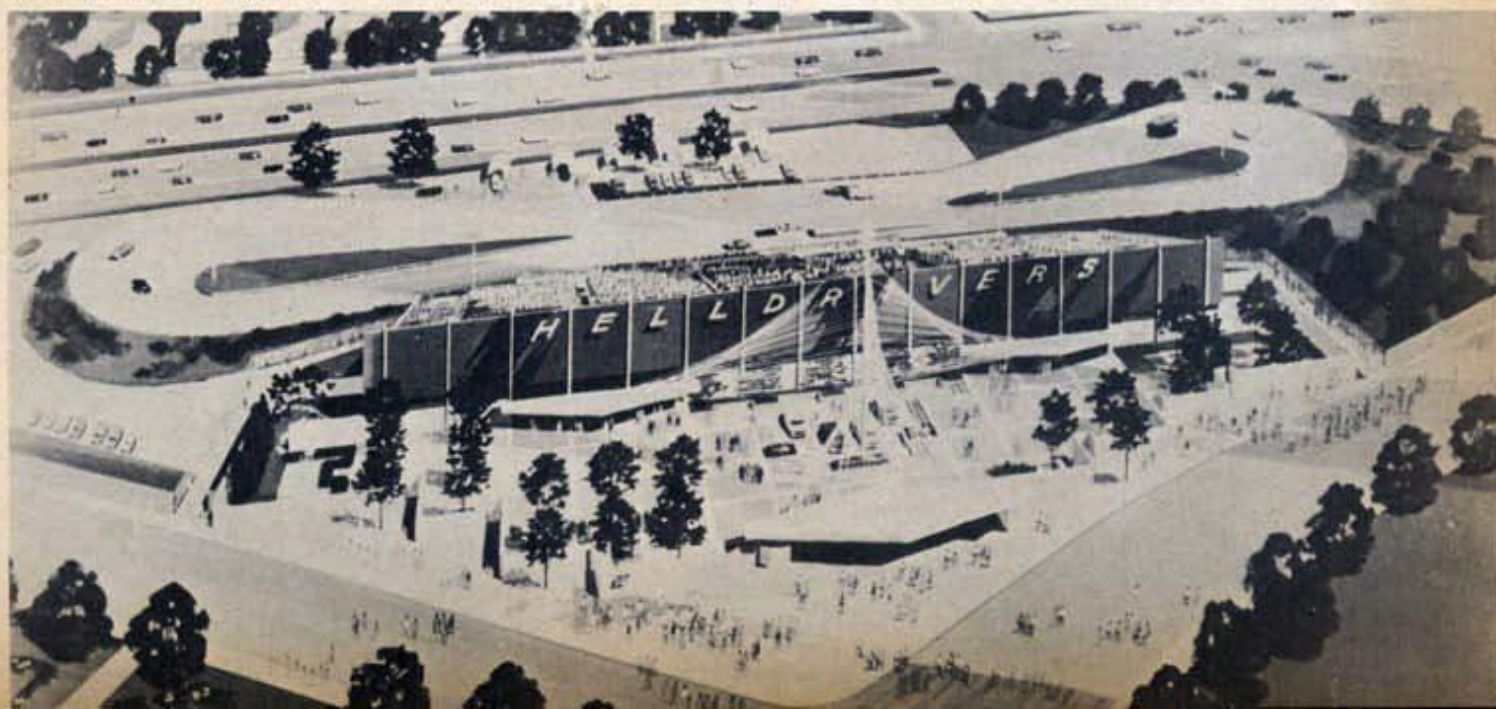
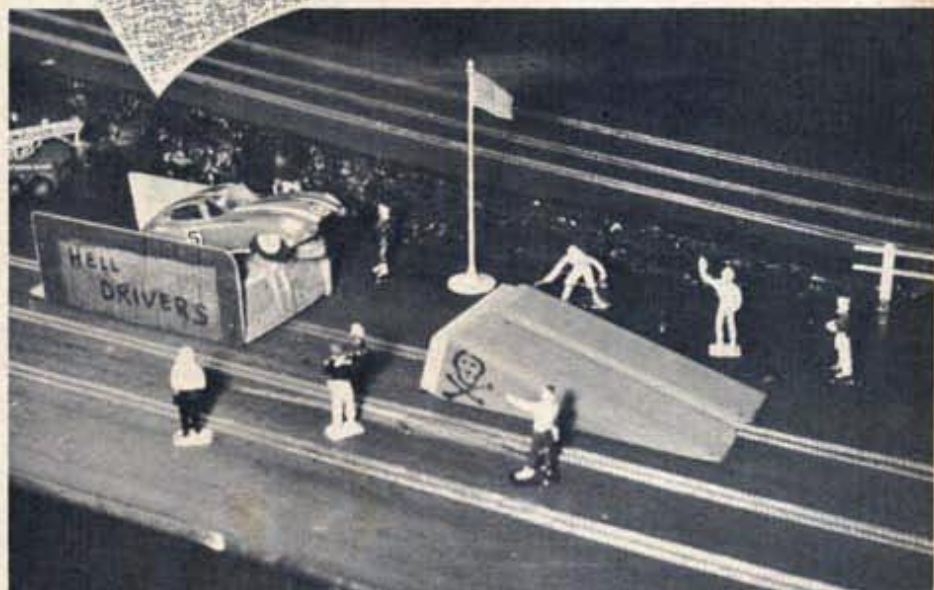
Here come the DAREDEVILS

TRY THIS SIMPLE TRACK MODIFICATION
DESIGNED FOR A GREAT AUTO THRILL SHOW!

by George Siposs

SINCE THE MAIN PURPOSE of model car racing and construction is to duplicate everything that the real cars do, it seems logical that a number of slot racers want to duplicate the New York World's Fair Helldrivers' stunts. Upon closer inspection it appears that indeed most of the famous tricks of these expert car jockeys can be imitated on a small scale. Building a special track is not an absolute necessity, however, for those who want to dress up their track and make it look like the real thing — we have decided to construct the replica of the "Thrill Show Stadium."

The 2,500,000 Auto Thrill Show stadium which features the New York World's Fair Helldrivers is shown in this architects drawing.



The actual track need not be to exact 1/32 or 1/24 scale. The most common construction method would be on a 4 by 8 particle board or plywood sheet. Four slots can be cut, however, two slots will suffice for most purposes. Actual thrill driving is seldom done with four cars simultaneously on the track.

The slots can be routed by methods previously described in MCS. They can be made to cross over to form a "suicide crossing" or, a kidney shaped track with one straight will do. Most stunts require a straight run at the ramp and a good runout before the cars enter the turns. At one point, perhaps at the back straight, the two tracks can be made to run very close together (say 1.5 inch apart) so that the cars will bump each other, unless one of the drivers slows down.

Each lane is wired to its own control in the conventional manner. In addition, double-pole double-throw switches are

added so the power can be reversed at will. Thus cars can be made to approach each other from opposite directions at "death defying speeds."

Cars should have bodies closely resembling the sedans that are actually used. If you are in 1/32 scale you might have to modify some bodies which were not originally meant for slot racing. Include a driver, seat belt, opening doors and roll bars for complete realism.

The pictures show the actual layout of the track. Do not spare any effort to duplicate the landscaping, building, signs and rails. Special crash rails can be made from 2-inch wide hardboard strip nailed to the edges of the track.

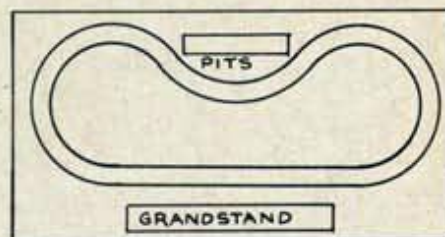
Here is a brief description of the different stunts and how to duplicate them on your slot track:

HANDSTANDS

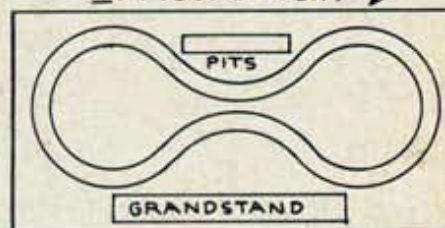
Simply paint a plastic "man" to resemble a colorfully dressed acrobat and cement it to a plastic platform. The

FIGURE 2

OTHER TRACK CONFIGURATIONS USING A 4'X8' SHEET



OR FIGURE EIGHT 2



SHADED AREA IS CUT OUT SO TURNS CAN BE ELEVATED (BANKED) BY PLACING WEDGES UNDER THEM. Cover these sections with landscape

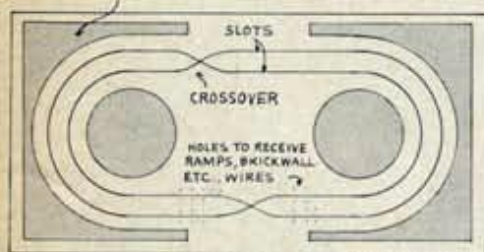


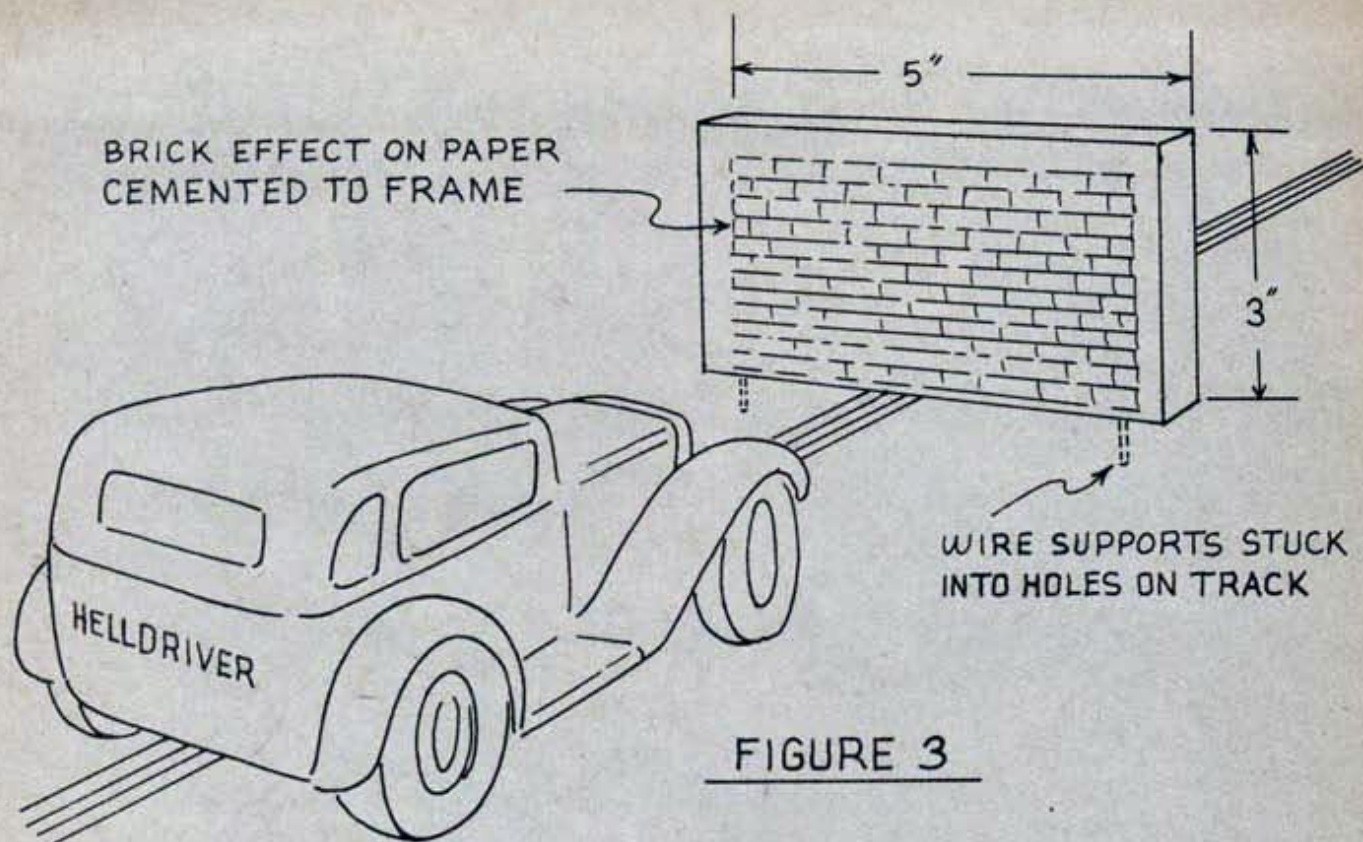
FIGURE 1

4'X8' SHEET

Hell Driver rides along at high speed on two wheels while performing the "hi-ski." Driver gets his car in this leaning position by taking it over the ramp (right) on two wheels.

Another example of precision driving is shown as drivers speed side by side into the far turn of the figure eight track at the fair.





The spectacular 70-foot ramp-to-ramp jump in the Fair's Auto Thrill Show sends a '64 Dodge convertible soaring through the air.

platform can be fastened to the top of the cars by one or two small screws. A silk scarf fluttering in the breeze adds much realism.

BRICK WALL

Make a frame from $\frac{1}{2}$ inch by $\frac{1}{2}$ inch wood, frame size should match the cars or measure about 5 inches long, 3 inches wide. Cement wax paper to the frame and paint it red. When the paint is dry, draw black lines on the paper to resemble bricks. (You might be able to find imitation brick paper in your local hobby shop.) Make several of these frames. Fasten small wires to each leg of the frame and drill holes in the track to match the wire spacing. Stick the wires through the holes so that the "brick wall" obstructs the slot. When the car is driven into this "wall" it will result in a very realistic effect. You may want to substitute plastic bricks for the paper, but the paper makes a more realistic sound.

RAMP

The ramps are made of $\frac{3}{8}$ plywood slotted by a router and beveled on one end so that they can meet the track at an angle. Fasten two pieces of wire into the ends of the ramp so that it will not slide

out of position. Use braided wire for contact tapes. Bend the braided wires under the ramp so that they touch the regular track tapes. Thus full power control can be maintained to the cars running up the ramp.

Two of these ramps placed opposite each other are used for the "70-foot" ramp jump. You may want to put power tapes on the down-ramp but this is not really necessary. You might need two small guides on the down ramp to steer the cars back into the slot.

If you use fall-away pickup arms, make sure they are locked in the "up" position for this stunt.

With a little bit of ingenuity you may be able to line up ramps so that the cars will cross over to the adjacent track while in mid-air. Remember, the adjacent drivers are not racing each other, so when the cars cross over, the drivers have changed cars until the next lap when the cars cross over again. If there is a cross over incorporated in the back straight as well as in the front straight, using a ramp, one car can be made to jump over the other one by putting the ramp on one of the lanes at a time. This effect requires split-second timing.

HI-SKI

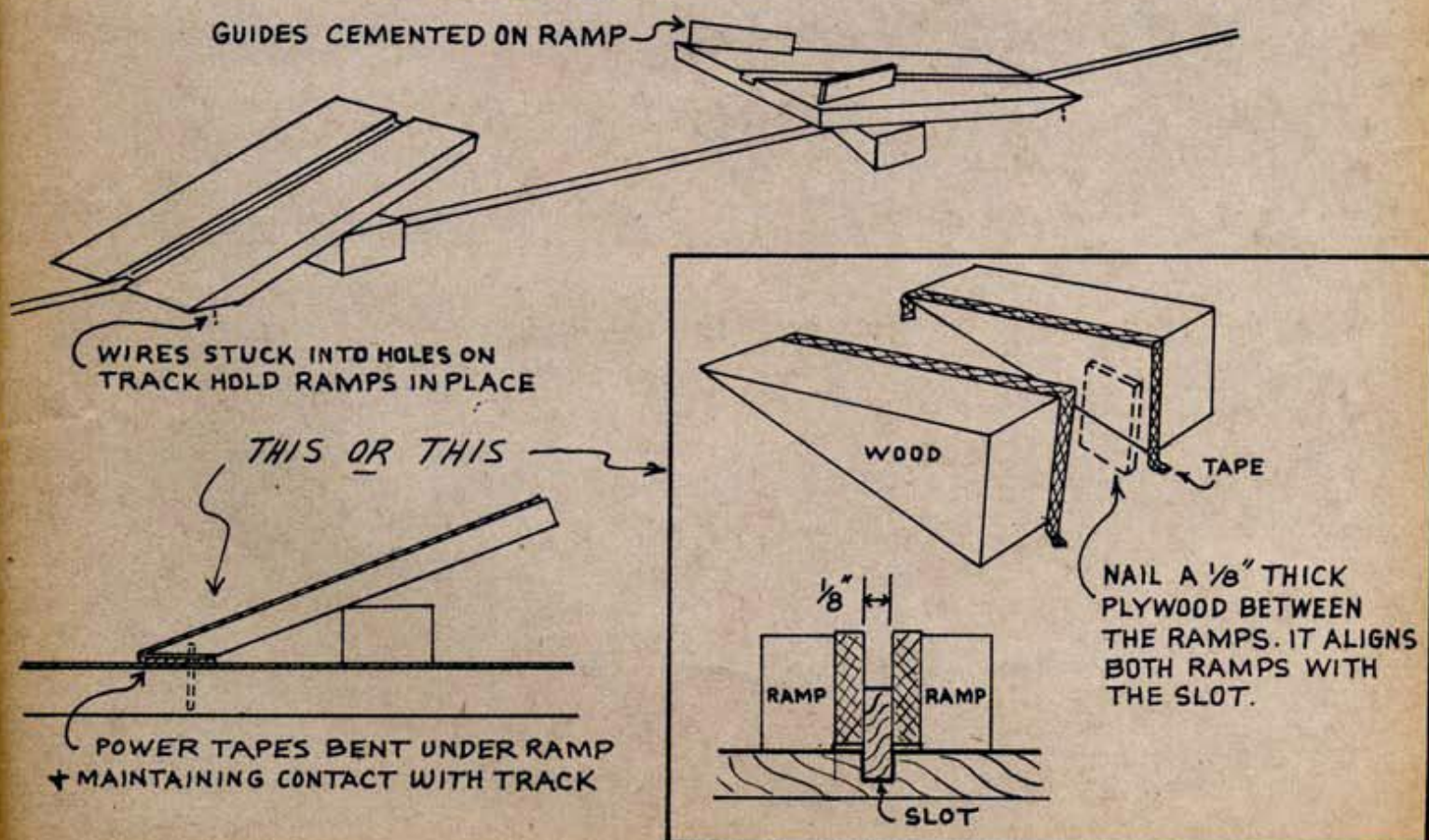
During this stunt, the car runs up on a ramp placed under one side only. If the ramp is high enough and if the car is driven fast enough, a complete roll-over may result.

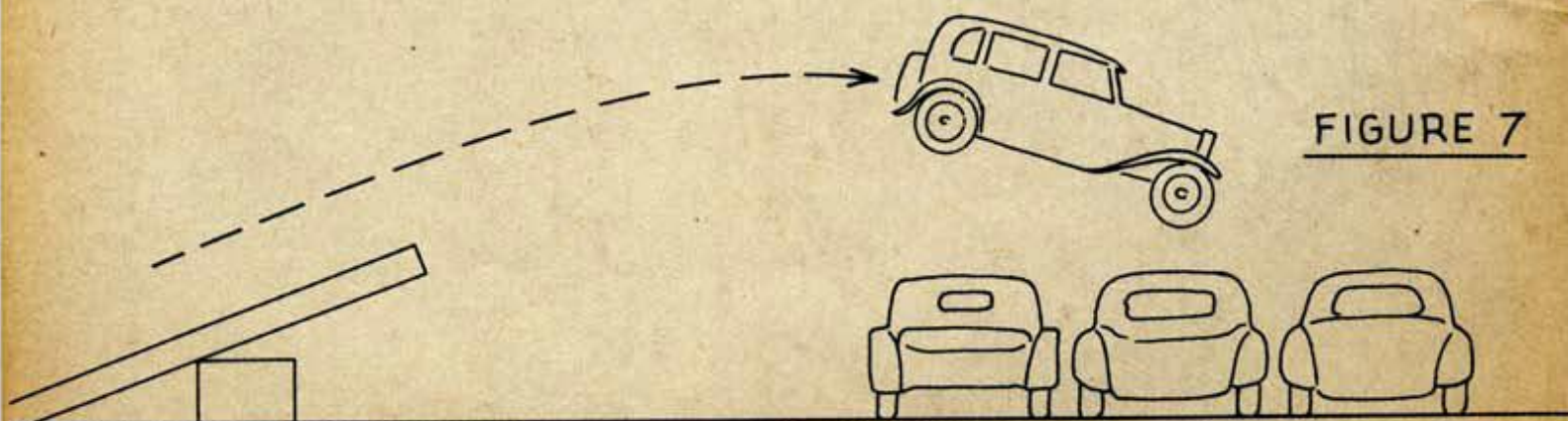
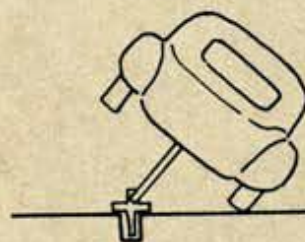
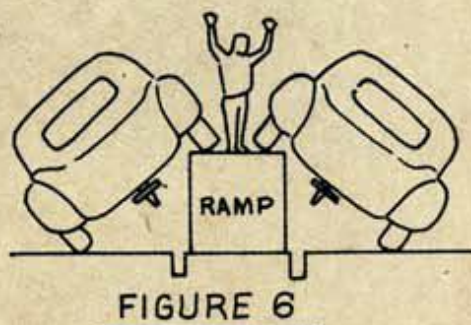
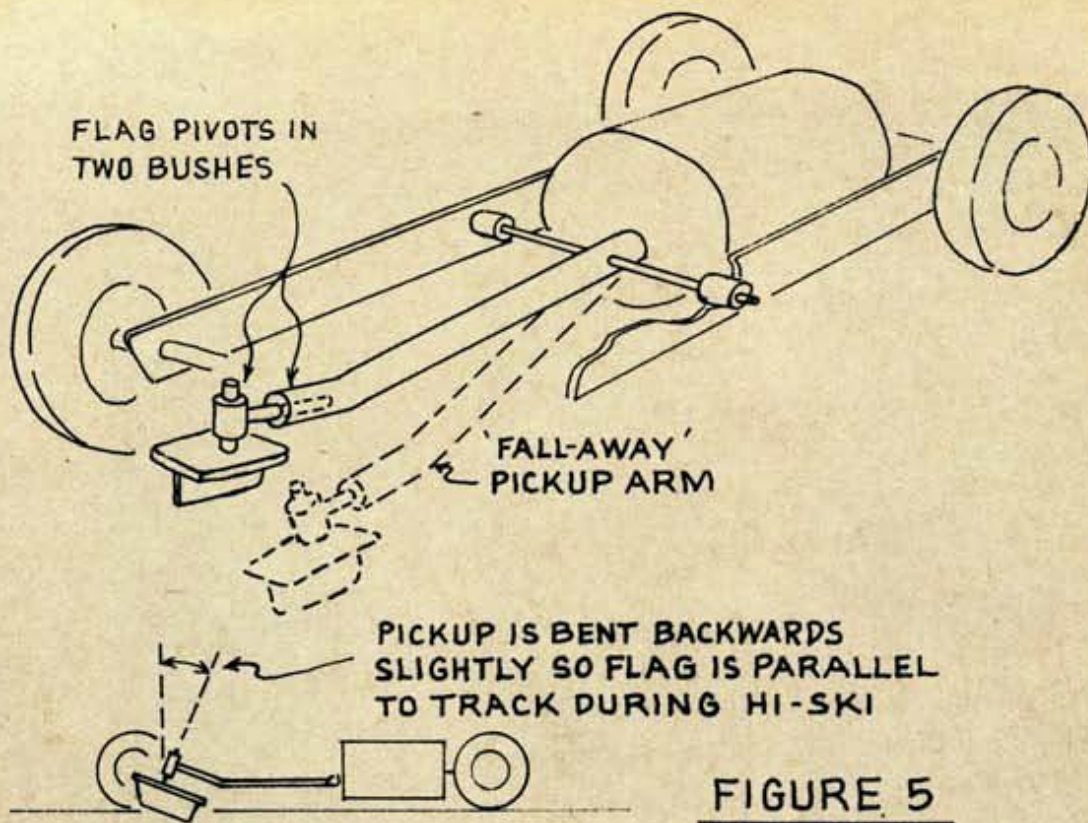
Incorporating a special pickup enables your car to do the famous hi-ski maneuver. Skillfull drivers can run their cars up on a one-side ramp until the car is sufficiently stabilized to run on two wheels. With very precise control, a car can be guided to run on two wheels for several feet. In order to maintain electrical contact during this stunt, use a fall-away pickup arm with a rotating flag. Thus the bushing holding the flag is allowed to rotate in a horizontal bushing, plus the whole pickup arm can swing down to the power tapes while the car is on two wheels. To maintain the proper angle, the flag bushing should be bent slightly backwards. This will not affect performance too much while driving normally but will allow the flag to ride parallel to the track during "hi-ski."

"CLOWN ON THE RAMP"

Using a ramp of the proper width between two lanes, two cars approach it and lift their nearside wheels at the

FIGURE 4





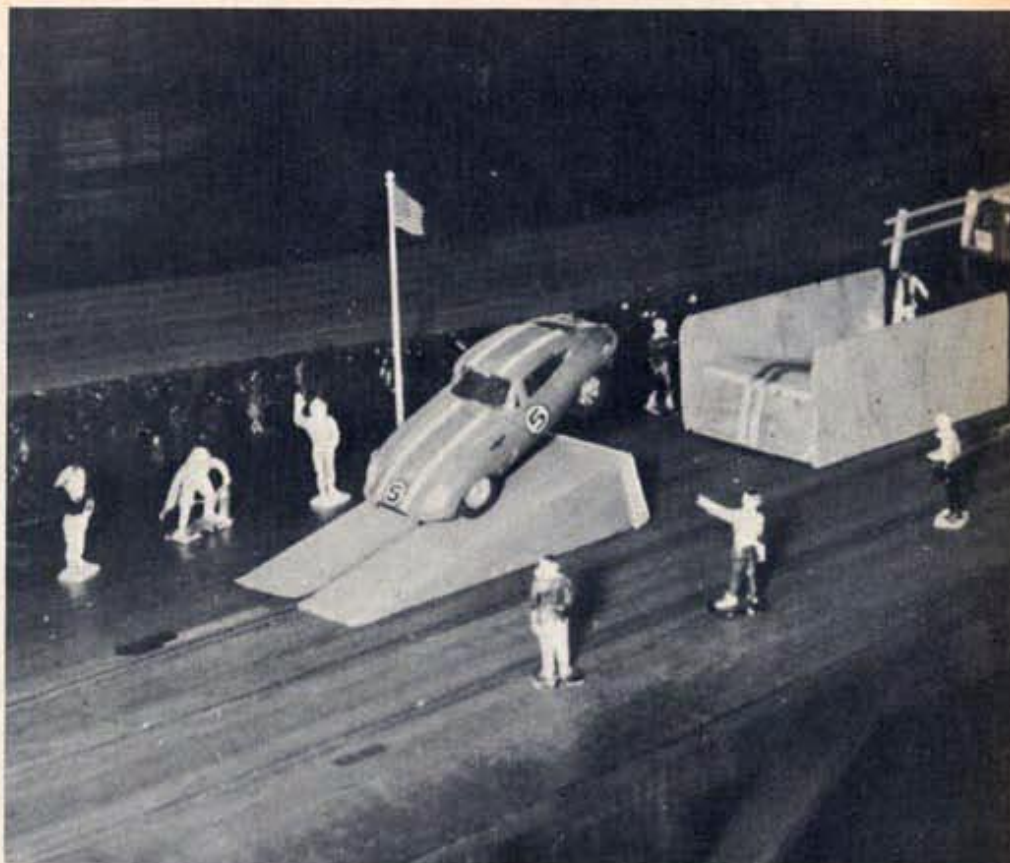
same time. A plastic "clown" can be put on the ramp in a position which is just cleared by the cars. (Measure this position by advancing cars slowly by hand.) At high speeds the cars swing slightly out of the normal position and the clown may be knocked off its feet. See how fast you can drive without actually touching the clown.

DEMOLITION

Elevate the jump ramp sufficiently so that the car can be made to jump over several cars placed across its landing path. You may even want to make it crash into one of the "junks." Use polyethylene cars for this stunt. They are cheap and will deflect sufficiently during impact so that neither car is damaged permanently. One can buy a "fly-apart" car (in a dime store) which is put together from several sections, spring-loaded, so on impact it seems to explode and fly apart. This is a very realistic effect and may serve as a windup to a most spectacular show.

The "Flying Guide" sails through the air on the slot track version of the ramp-to-ramp jump.

Out of buffoonery or fear, clown throws up his arms as two Hell Drivers give him a close shave.





for a lightweight **STINGRAY**

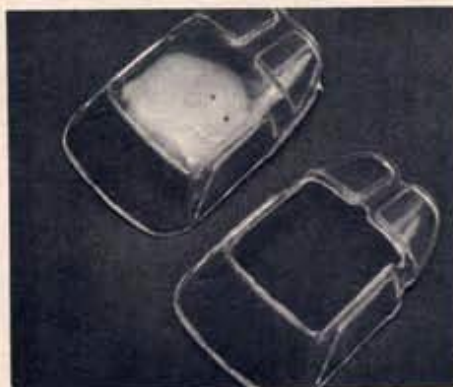


First outing for the lightweight. Body changes are evident as well as reworked wheels. Response is much better than stock kit assembly.

Removal of hood grille units and center divider on rear window updates basic body shell. Wheel wells have been opened up and lips extended as on Mecom Racing team prototype.



Cut out rear window divided one sixteenth from edge of opening, use hot iron to upset remaining plastic and then file carefully and a continuous bead around opening will result.



A large percentage of glass area can be removed without affecting strength. Removal in this area will also help lower center of gravity.



Body shell can be lightened by removing web behind grille recess as well as directional lights. Thin down vertical about 3/16 inch of lower rear stiffeners used to locate body sides after glue has dried. Pan can also be removed without harming appearance.

DOCTORS REPORT

PATIENT: Stingray.

SYMPTOMS: Tired, slow to respond, overweight.

DIAGNOSIS: Due to excess weight, patient must go on diet.

METHODS: A gradual detailed reducing diet administered in degrees.

Or when looking for an ounce: Every Gram Counts.

EVERYONE has heard the old saying, "excess weight is bad for you." It saps your strength and energy and makes the old pump work harder. Well the same holds true for your car, big or small. Horsepower per pound of car weight is one of the big factors in obtaining superior performance in any automobile.

As a study in how this factor can influence an already good performing model racing car, a Revell Stingray was subjected to a weight reducing study. If sufficient time and effort is expended in analyzing all the factors effecting the response of a slot racing model, definite improvements can usually be incorporated that will show additional gains in performance.

Our desire in this case is for improved performance, basically through reducing weight. Another objective is to retain as much of the original kit as possible or to add no weight but aid performance.

The Revell Stingray was used as a basis of comparison. We have compiled many hours running them in stock and modified form and are fully aware of their ability. None of the various modifications however have involved a reduction in weight. Thus prompting this approach to evaluate its effect.

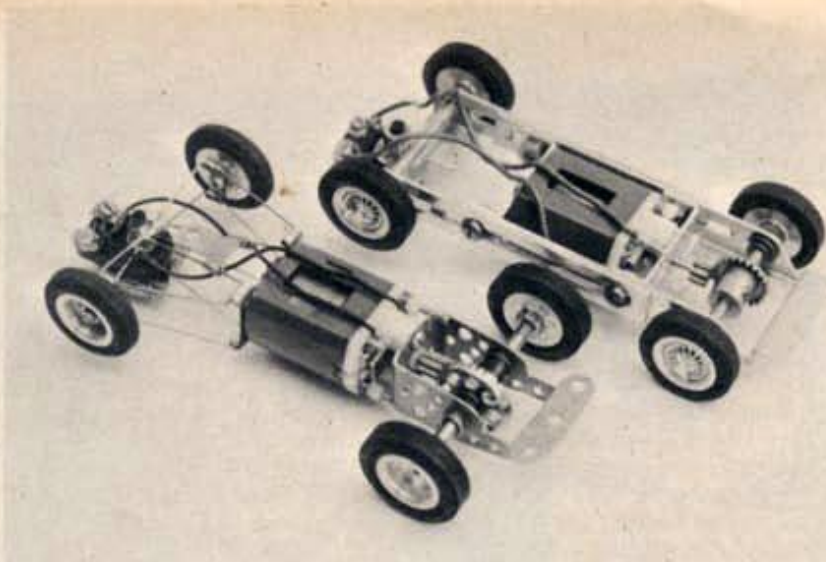
The total weight of the car as assembled from the kit is a shade over 3½ ounces or 100.02 grams. For those not familiar with Metric equivalents for Avoirdupois weight, one ounce is equal to 28.35 grams. It is a much easier method of compiling weights of under an ounce, and will be used in the description to follow.

To be effective, as much weight as possible should be removed; still reliability must be maintained so a little



Cutting out the flat webs in interior section and replacing with .010 sheet stock adds a little to overall weight reduction.

Differences in chassis construction are apparent. The light weight incorporates motor body as structural member. Short self-tapping screws attach front and rear units to motor case.



forthought must be used as to how and where this can take place if any appreciable amount of the 3½ ounce total can be reduced. To this end, each part was carefully considered before being used in re-assembly of the car. Some savings amount to only a fraction of a gram, a very little amount but when attempting to save an ounce every little gram counts.

The body shell, while not as light as the vacuum formed shells, can stand a slight reduction in weight without sacrificing strength. In racing trim most all chrome is removed so we have eliminated bumpers, grille, side trim and wheel inserts. The web behind the grille area can be removed with about 1/8 inch of the bottom pan behind the rear frame mount. Minor cleanup of the ribs on side panels and radiusing the edges of the rear frame mount completed the stock removal from body. That is until it was decided to up date our model to a '64. This was accomplished by the removal of the bar between the two rear windows and removing the grid panels on hood by scraping.

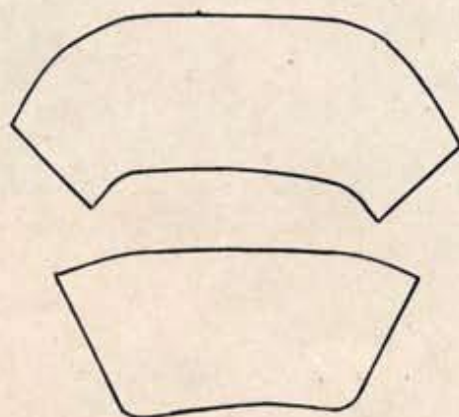
This change required a re-evaluation of the glass area. By removing all of the unexposed stock in the roof section leaving just a small cementing edge, a savings of 1.2 grams was made, but the depression in rear section would not look well so it was decided to replace all glass with thin sheet stock. This was a lot more work but additional grams were removed. Total glass weight was reduced to only .55 grams from a stock 3.90 grams. The interior panel was reduced .98 grams by cutting out the flat bottom panels and replacing with .010 sheet stock, approximately 1/3rd as thick as the stock part.

While on the subject of body revisions, we might as well tell you we added a little weight. This was against our primary aim, but was in the interest of obtaining improved handling. A review of the Nassau Speed week in one of the

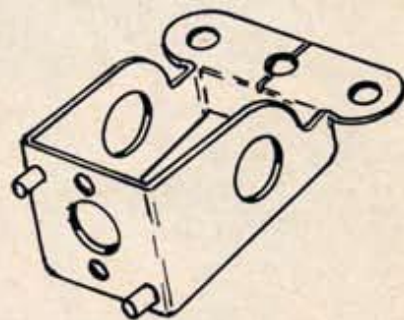
sports car magazines produced some pictures of a G.T. prototype Stingray entered by the very aggressive Mecom racing team. This model incorporated flaired flanges at wheel openings to cover additional tread width due to very wide base mag wheels that were used. The flange must be added to agree with F.I.A. specks in that wheels and tires cannot extend beyond the body. A similar condition is found on Carrol Shelby's racing cobras. The gain in overall tread width will improve handling but required the addition of .8 tenths of a gram of weight to the body.

The Revell chassis by itself is fairly lightweight but when completely assem-

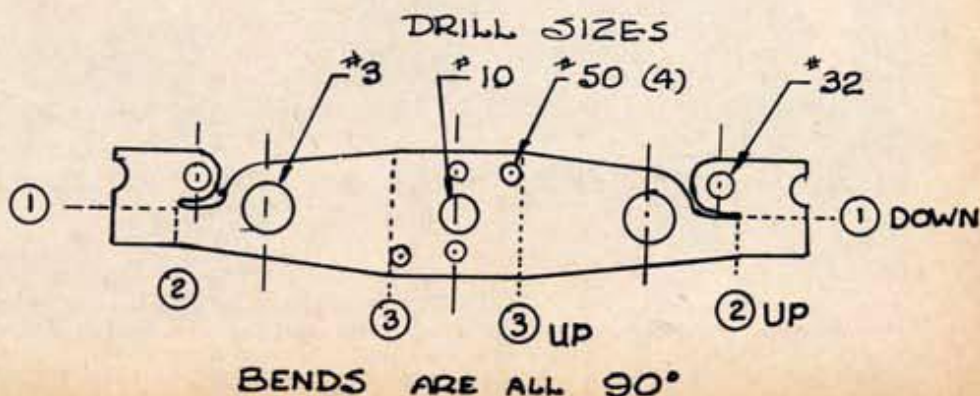
bled contains an excess of hardware which is necessary in a kit to allow a wide variety of installations. In this case we are only concerned with one application and were sure improvements could be made in this area. By using the motor case as a part of the chassis, a number of small parts can be eliminated. The two small holes in the motor face plate were used to attach the bracket developed to support the rear axle and provide body mounting. The stock rear axle bushings were used as well as axle spacers. A minimum amount are required if the correct combination can be found and installed between gear and bushings rather than in normal outboard location as the rear



PLASTIC TEMPLATES CAN BE USED FOR WINDOWS TO REDUCE WEIGHT



PATTERN FOR REAR FRAME SECTION



frame member is much narrower than the stock item.

The idea of attaching both front wheels solidly to the axle just does not seem to be the proper approach. If the car is moving in any attitude other than a straight line, one of the tires will have to drag. This situation of course holds true in the rear but differential assemblies in 1/32 scale have yet to be developed. The front end can be improved without too much extra work. An independent installation eliminates most of the front axle weight. We went a step farther by using music wire to locate wheels, pickup bushings and serve as a semi space frame. The stock forward body mount is retained by using a small strip of brass located between top members. This allows reducing the height of the plastic boss by 3/16th of an inch. When soldered it has adequate rigidity and at some savings in weight. The front wheels are converted to independent installation by enlarging center holes with

a number 3 drill and pressing in a set of rear axle bushings. These rotate on short lengths of 1/8th inch O.D. tube held to the upright by a small washer and a 2-56 screw and nut. A short length of 1/8th inch I.D. tube and a washer form the guide shoe support.

A jig was made of scrap wood to hold the various parts of the chassis in correct alignment during assembly. This is mandatory if a lot of rework is to be avoided and will more than pay for the time required in its construction. A slight additional benefit in center of gravity location can be accomplished by lowering forward end of motor to minimum track clearance and holding it in this position as front end is soldered.

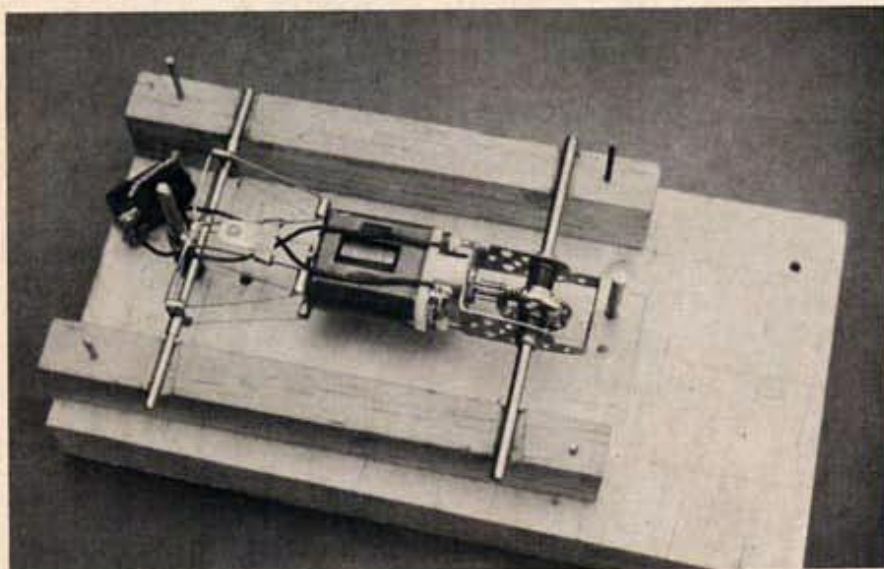
Minor items all add up when you are attempting to remove every excess gram. The small holes drilled in the front wheel web, between bushing and rim, and opening up the rear wheels by drilling and a lot of filing, removes some small amount of weight and has the additional benefit

of appearing somewhat like an American racing five-spoke wheel. Even the contrite gear shaved off 1.76 grams in two stages. One gram was removed by drilling the No. 30 holes in the gear web and an additional .76th of a gram by turning the axle boss down to the minimum.

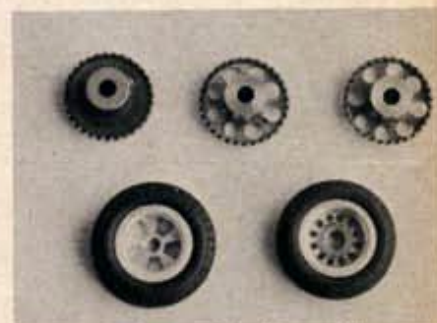
A tabulation of the various parts when assembled into units and weighed proved to be somewhat disappointing, a total of a little over a 1/2 ounce is all that had been removed.

	Stock	Modified	Savings
Chassis	70.54	62.42	8.12
Body	30.61	20.86	9.75
Total	101.15	83.28	17.87

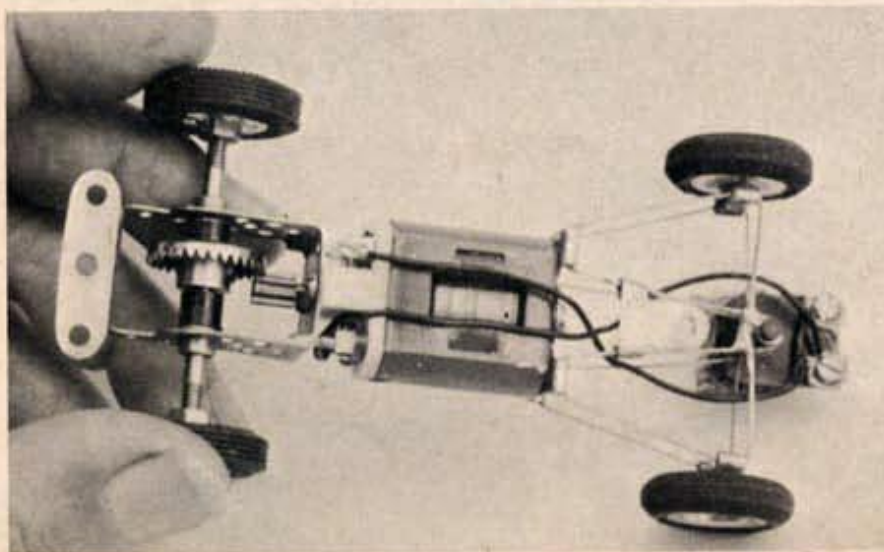
Not a great deal of weight in itself but when considered percentagewise, this is a fair improvement. In fact, with the other improvements incorporated in its construction, the overall response is very satisfying and well worth the time involved in modification. Why don't you try putting your Stingray on a diet?



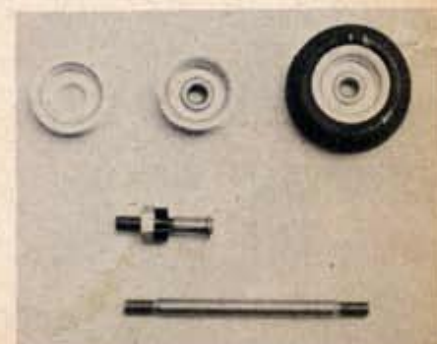
A jig is essential to properly hold and align parts during assembly, as adjustments are hard to make after all parts are assembled.



Weight can also be saved in many other ways: Drilling holes in the gear web helps but additional savings can be gained by turning off all excess material on hub as well. Stock wheels have appearance of American Racing mags by drilling and filing "V" sections. Stock removal helps. Bushings used in front prevent same treatment, so small holes were drilled.



Piano wire .018 in diameter is used for front section with brackets formed of sheet brass at wheel spindles and motor case. Rear section is bent up of sheet brass. Fewer axle spacers are required when installed between side rails of frame. Stock removed from contrite gear boss helps save weight.



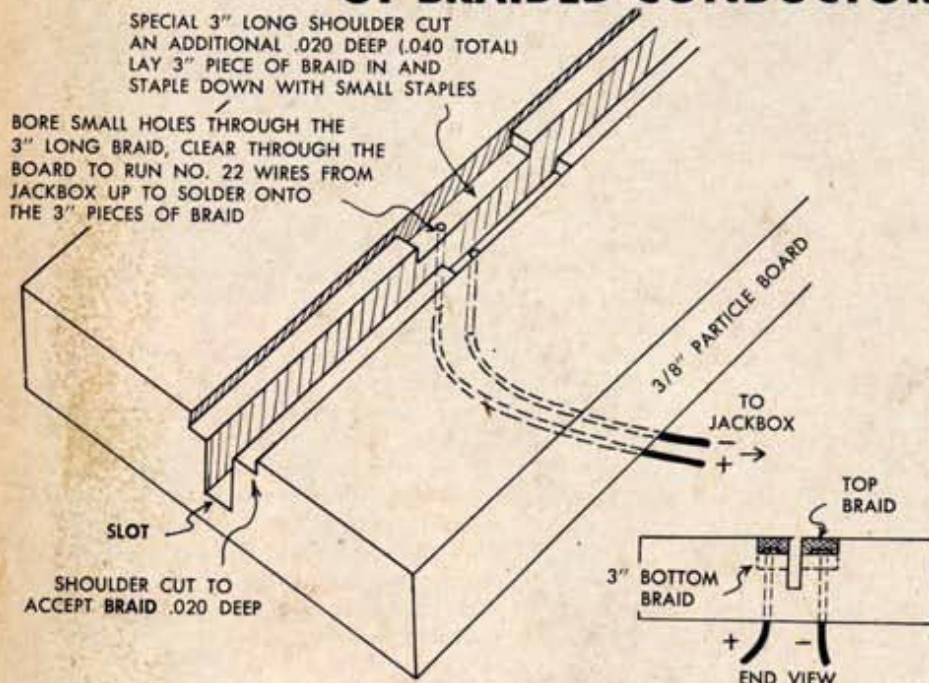
Modifications to front wheels consist of drilling to accept axle bushings which are pressed into wheel. Stub axles are made by cutting stock axle slightly longer than length of bushing and peen end to retain bushing. Threaded end can then be used with jam nut for mounting to frame.

SLOT RACER'S

Work Shop

NEW IDEAS IN RACING MODIFICATIONS

A SOLID, TROUBLE FREE WAY TO JOIN TWO ENDS OF BRAIDED CONDUCTOR



STEP 1—Cut the regular 1/8" wide by 1/4" deep slot.

STEP 2—Using special routing attachment, route the .020 deep shoulder that is used to accept the braid that acts as conductor.

STEP 3—Where you decide to join two ends of the conductor together, set the router an additional .020 (.040) total, and cut a 3" long shoulder. Cut a piece of 3" long, .020 thick by 3/16" wide braid and lay in the 3" long recess, and staple it down using small staples and a stapling gun.

STEP 4—Now lay the regular braided conductor over the 3" strip, and staple down so the two ends of the top conductor meet. Solder. You now have an extremely solid connection that will require no further maintenance.

By Raymond E. Hoy

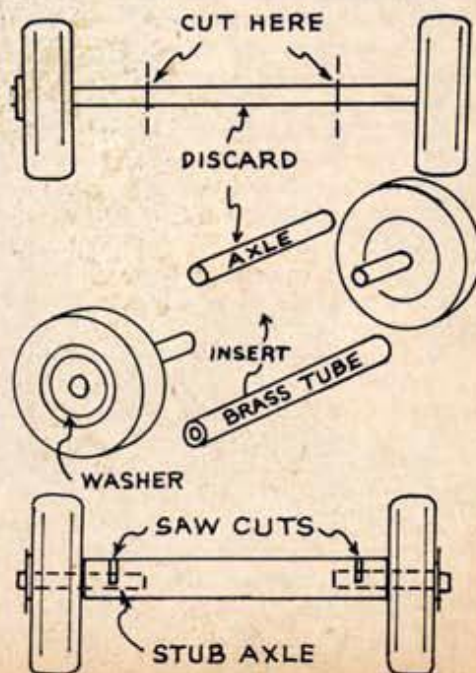
HOW TO BUILD A FRONT AXLE ASSEMBLY THAT ALLOWS INDEPENDENT WHEEL ROTATION

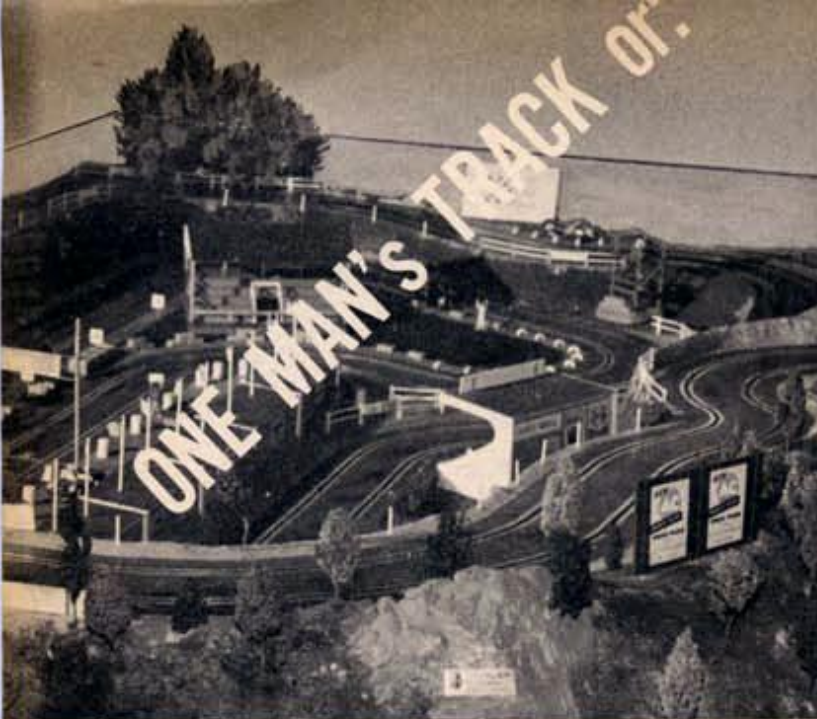
STEP 1. Take two front wheels (not threaded types) that have the correct size holes for the plain-type axle you have (1/8", etc.,) and slip them onto the axle. Solder a washer on each end of the axle to keep the wheels on. Measure in from the inside edge of each wheel about a half inch and cut the center section of the axle out and discard it. You now have a wheel mounted on a stub axle, one for each side.

STEP 2. Obtain a piece of Perfect brass tubing the next size large than the axle you have. Determine the distance you need between the inside edge of each wheel and cut the tubing to fit. Now slip the stub axle into each end of the brass tubing. Take a razor saw and lightly cut through the top of the brass tubing, just far enough so you can drop hot solder through this cut onto the axle.

STEP 3. Determine how much end play you need between the inside edge of the wheel and the end of the brass tubing, (enough clearance is needed so the wheel spins freely, but doesn't wobble) and clamp everything in place. Heat the brass tubing and drop hot solder in place through the saw cuts. This locks the stub axle securely inside the brass tubing. The wheel is now free to spin on the stub axle.

The finished front axle assembly allows each wheel to rotate at a different speed than the other, such as when the car is being driven slowly around a tight corner (exactly as a real car would do). Should you ever want to remove the stub axle, merely heat the tubing and pull gently on the wheel and it will slide out when the solder melts.





HOW I BUILT A TERRIFIC RACE COURSE USING IDEAS FROM MODEL CAR SCIENCE AND MODEL CAR AND TRACK

by G. Siposs

A DELUXE SLOT TRACK that incorporates all the known "goodies" is everyone's dream. Construction cost for this project is not prohibitive if the willingness to put the effort into building it is there. The know-how is readily available when one browses through back issues of your favorite magazine.

Our track was intended to incorporate one or two fast straights, hairpins, climbs and descents, pits, scenery, people, in short everything that would make you believe that you are actually visiting a famous race course. The cost is not to be too high and the space to be taken up is minimal. This last point was resolved by clearing a 12' x 7' area in the garage which was occupied by odds and ends. We then took a graph paper and laid out the proposed course in 10 to 1 scale. After much trial and error in squeezing the maximum lap length into such a space (without making it appear overly cramped) we came up with a modified figure-8 patterned after the article in the March issue of MC&T. A tunnel seemed to be a good idea to introduce variety into the layout. The serpentine hillclimb was based on the principle shown in the Aug. '63 MCS. In order to allow us to visualize the layout in three dimensions, we built a scaled down replica using Scotch Tape and cardboard. The slot layout was roughly drawn up and it became evident that there was enough room for three lanes. (Picture 2.) All narrower-than normal slot spacings, turns and straights were decided upon at this stage.

Although particle board is an excellent material to use when there is sufficient backing under the track, we elected to use 3/8 inch plywood since the supports were 1x2 inch strips nailed to the garage walls. Two sheets of 4x8 did the job very well with minimum left over. One sheet supplied material for the large base corner and the end of the long straight, while the other sheet was made into the ascending straight, the esses and the base for the tunnel. After rough cutting the sheets, (Picture 3) they were put on the floor and the slots were marked by pencil. Next, the corners were cut (issue 1., MC&T) with a 1/8" router bit. With all the corners finished, we cut the straights making sure that the slots met exactly wherever there was going to be a joint in the track.

When all the slots were cut we went over them again with a special cutter to make recesses for the braided wire. Now, the majority of the work was finished and all that remained was to connect all the base sheets by using overlapping pieces

of plywood on the bottom. Wood screws were placed at points where no tires or tapes were expected to be during racing. The "mountain" section was left flat on the base to facilitate routing. After this, the track was lifted up to the wall supports and the mountain supports were made up, glued and nailed to the plywood.

At this point we used plastic wood compound to fill out and repair the imperfections caused by bad grain, cutting and differences in level. The whole track was painted with black tire paint with a little bit of white tire sidewall paint mixed in to make the track appear slightly grayish, asphalt-like.

For electrical tape we used the best on the market, braided wire with adhesive backing. (Obtainable from Calmont Wire and Cable, 3107 S. Kilson Drive, Santa Ana, California). The tape laid down smoothly and adhered well to the plywood. In some critical areas (such as corners where fast cars would tend to pull up the tape) we drove in some small nails to reinforce the tape. The tape ends were fed through small holes as shown in the May issue of MCS. A battery was hastily hooked up to each slot in succession to try out our new track. It was a pleasure to drive on, the top of the track being pleasantly banked so full speed could be maintained for approximately 13 feet. The switchbacks provided some interesting moments but at no time did we feel uncertainty or unwanted wobble.

The wires were then disconnected and the landscaping was started. First we bought some cheap 1/8 inch sheets which were cut to resemble distant mountains. A 4 by 7 foot sheet provided enough material for all the backgrounds. It was then painted flat green with a little bit of white on the top to simulate snow-capped peaks.

The raised portions of the track were covered on one side with screen wire. An old patio door had more than enough material for this. The screening was shaped to resemble uneven terrain, we then applied plaster of paris on the surfaces. The waterfall in the corner was covered with some (fibreglass) epoxy to make it waterproof. Mixed green and brown paint was applied to the dry plaster and this topped off the scenery.

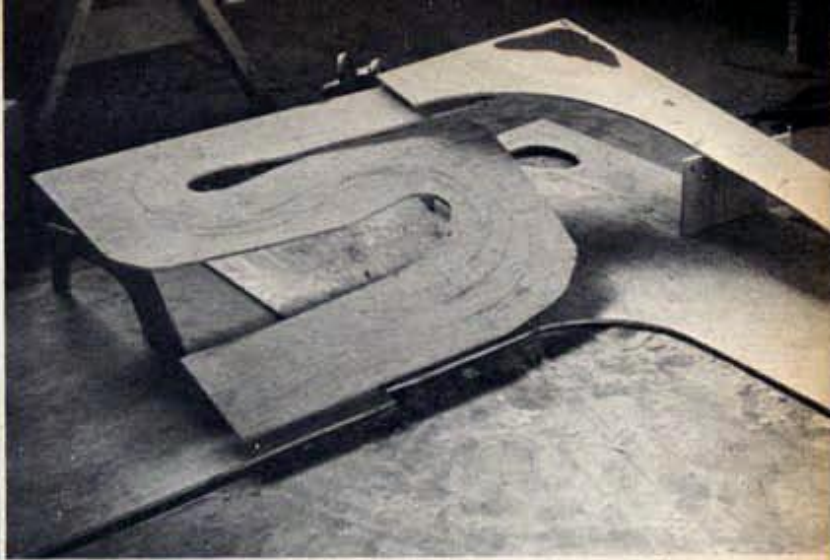
Trees were fashioned using twigs and lichen which can be bought in hobby stores. Half "tree trunks" were cemented to the backboards with some lichen on top of them too. This added depth to the background and makes the cars appear to race down tree lined country roads, a la Le Mans. Rocks and gravel were cemented at some spots, while plastic "haybales" provided cushioning on the outside of the hairpins. Railing was devised by drilling into the track and cementing 1/4 dowels into the holes. Elastic bands serve as "boards" described in Jan. MCS.

Since the track is intended to simulate a road course, it was intentional that the top of the waterfall has little foliage since it is at a "high altitude." The plaster of paris was not completely covered up by paint at this point to simulate snow on the ground. As we reach the lower sections of the mountain, the trees are larger. At the extreme end of the long straight (this is on the "plains") trees are more orange in color to simulate a different altitude.

Now we were ready for buildings such as pits, starting building, first aid hut, grandstand etc. Track scenery construction was described in the Feb. '64 MC&T. Behind the top of the "mountains" in the background, we stretched blue cloth on the wall to simulate the sky. At the bottom edge of the track base we used 8" wide 1/4 inch plywood painted dark green to shield off the underside of the track. It should be mentioned here that at two of the hairpins, slots were cut to make an "escape route" described in Feb. '64 MC&T. At the time of this writing the shunt switch is not connected yet. A terminal board was constructed which provides terminal posts for the battery wires, fuses, reversing switch and phono-plug sockets. Fig. 10. The complete wiring diagram of the track, the pump hookup of the waterfall, pits, buildings and other details will be described in the next issue.



2. Slot spacing, turns and straights were planned on the cardboard replica of the track.



3. After rough cutting plywood, slots were determined and marked in with a pencil.



4. Corners were cut with a 1/8 inch router bit.



5. Straights are cut making sure slots meet exactly at each joint.

6. Easy to apply Calmont Stik-Trak tape went down with a minimum of effort to provide superior results.



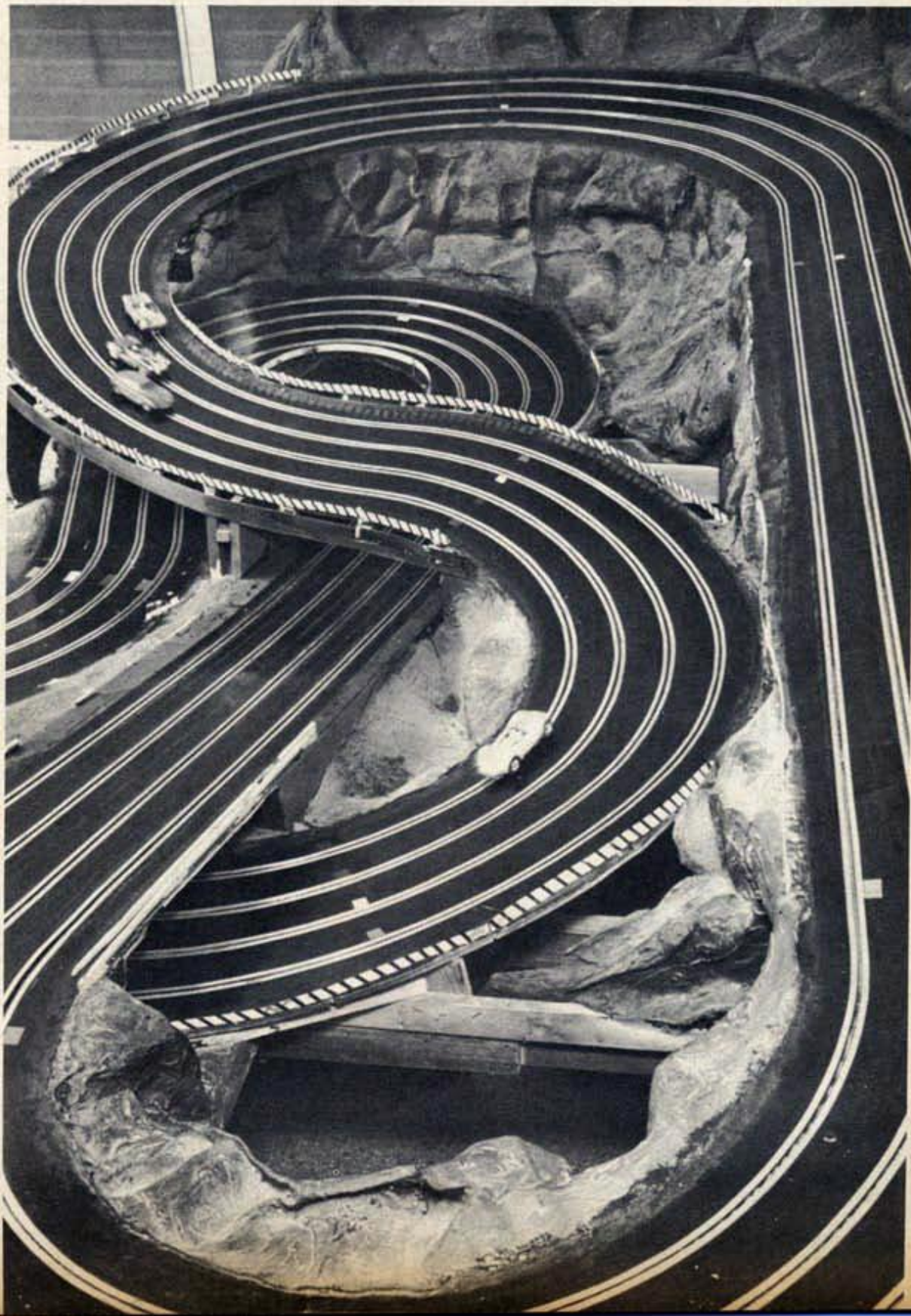
7. Screening was shaped to resemble uneven terrain and plaster of paris was applied.

We are planning an inaugural race on this track, and as my friends and I are sticklers for detail, we plan to run a night race where only the pit lights will be on, plus the headlights of course. At one point we shall drop dry ice into the lake under the waterfall, to create a fog effect! Don't miss the next issue which will have a complete pictorial report on the first big race.



Spotlights: TRACK of the MONTH

HOBBYCRAFTERS Pinellas Park, Fla.





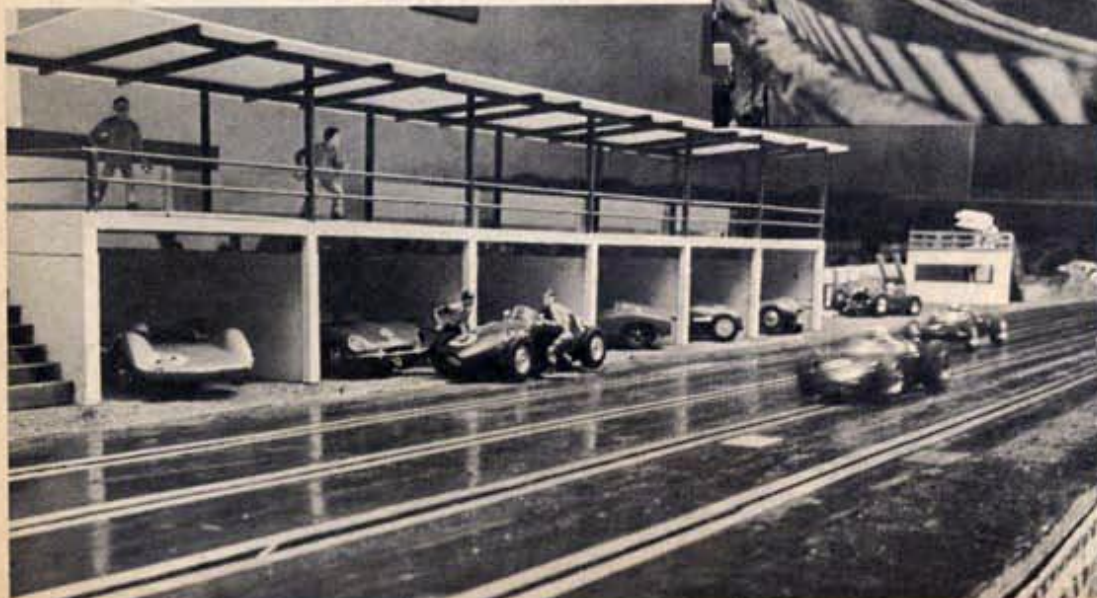
STRAIGHTAWAY OF VOLT STEALERS CLUB TRACK IS 43 FEET LONG, MAKES FOR HIGH SPEEDS.

The main ideas and determination for this complex set-up originated with Robert Peruche and Guy Taylor, both of Hobbycrafters, 5735 Park Blvd., Pinellas Park, Florida. They also organized the club which makes its home at the track, the Volt Stealers. Club officers are: Jim Hoover, president; John Stevens, treasurer; a technical committee consists of: John Gall, Robert Peruche, Harry Kramer, and Steve Sorg. A program committee also exists for setting up contests with other clubs. Peruche and Taylor also formed the Southeastern Slot Racing Association. All member clubs of any other wishing to compete on the Hobbycrafters' track must conform to the rules shown below.

At present, other clubs are forming in areas of the state close by. Clubs in St. Pete, Osala, and Sarasota have been invited to future 'rallies.' Information is available for those interested explaining how to build regulation tracks of their own. Membership in the clubs or association is open to anyone



Excellent underpass arrangement permits a track 240-feet long, more than a mile in 1/24 scale.



Pits are realistic European-style installation, make sports and Grand Prix cars look right at home.



Sports car races with four cars abreast through turn (above) feature realistic crash sequence at right as outside car hits rail.



interested. Meets are held twice a week, Saturday afternoon and Saturday night. There is no charge to use the track but members in the club pay dues. Trophies, donated by local merchants, are awarded the winners of race meets. Points are given for first, second, and third place winners and the highest cumulative total at the end of the year is awarded a trophy also.

A small, elevated grandstand is furnished for observation of the four-lane track along with one for the judges and one for the drivers with a view of the entire track. Other features include a system of colored lights that indicate which car is leading, and an area for working on the cars. The track is 250 feet long, which is over a mile in 1/24 scale. It has a 43 foot straightaway and a banked 30° monza turn. The track is equipped to handle cars with or without brakes. There is no restriction on motor size as long as it runs the correct voltage for its class.

Southeastern Slot Racing Association Rules

1. Competition will be divided into six classes:
 - A. Gran Turismo—9 volts
Any closed top sports car including American made compacts
 - B. Production Sports—12 volts
Any mass-produced, open, two seat sports car that could be expected to be seen on the highway
 - C. Modified or Racing Sports—15 volts
Any open sports car built specifically for racing
 - D. Late Model Stock—18 volts
Any mass-produced American full size family car. Car must be from the last three production years
 - E. Grand Prix "A"—18 volts
Any car built in the years 1934 through 1960
 - F. Grand Prix "B"—18 volts
Any Formula 1 car dated from 1961 to date
2. Cars will be built to an accurate 1-24 or 1-25 scale
3. Each driver must provide a speed control connected to a ¼ inch phone jack
4. Car construction
 - A. Cars must be equipped with all distinguishing equipment. Each part of the body and equipment must be securely fastened as loss of vital parts can cause disqualification
 - B. No dream cars or custom cars allowed
 - C. All cars, except Gran Turismo, must have a steering wheel and driver from the cockpit line up. Steering wheel may be omitted in Gran Turismo Cars
 - D. Car owner's official number must be plainly visible on at least two locations
 - E. Car body must be securely fastened to chassis. Rubber bands, tape, etc. are not allowed
 - F. Entire chassis and motor must be within the body of the car
 - G. Guide sled must be located in the center of wheel tread with pivot point within ½ inch ahead or behind the front axle. Sled may not be more than 1½ inches long and ⅝ inch wide
 - I. Absolute minimum grand clearance behind guide sled will be ¼ inch
 - J. Front and rear axles must not extend beyond tire rim on open wheeled cars or the car body on closed wheel cars
 - K. Any tire style is allowed providing tire width does not exceed 13-32 inch maximum
 - L. Wheelbase and tread must be correct in scale within (+/-) ¼ inch
 - M. Windshields and back glass are required on all cars with a roof
 - N. Groove in track will be ¼ inch wide and 3-16 inch deep. Adjust your guide sled accordingly
5. Racing
 - A. Cars must pass safety and technical inspection
 - B. Driver must be an approved driver from one of the participating tracks
 - C. Place in starting lineup will be determined by time trials of one, five or ten laps depending on the event. Choice of lanes will be given in order of lowest time trials
 - D. A head steward will be appointed before each race. Any decision of this steward will be final
 - E. If at any time during a race a car cannot move under its own power, it will be passed to the pit steward. Driver may inspect or repair his car at this time
 - F. If a driver wishes to stop and inspect his car he must stop the car within appointed areas



GRAND PRIX SINGLE-SEATERS TAKE OFF REAR WHEELS SPINNING.

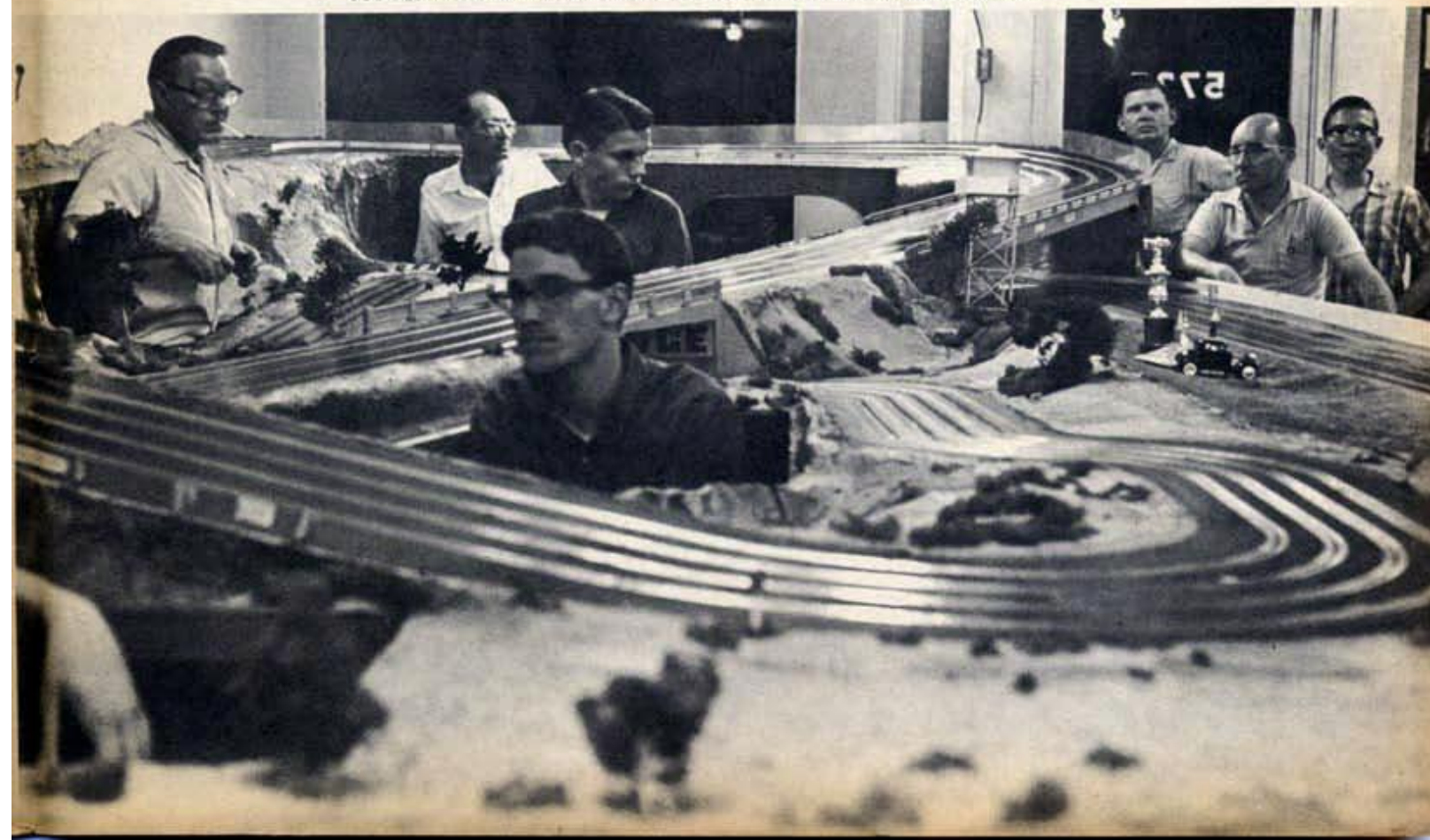


FOUR DRIVERS CONTROL RACE ACTION.



OCCASIONAL STOCK CAR CRASH LIVENS RACES.

JUDGES HAVE ELEVATED VIEW: COLORED LIGHTS SHOW RACE LEADER.



DAYTONA INTERNATIONAL RACEWAY

by Robert H. Schleicher

The Prototype:

"Daytona" is the annual scene of the opening round of international Sports Car competition. The Cobra team's challenge to the Ferrari supremacy in this field began here this February in the "Continental 2000."

The Cobra coupe, debuted at Daytona, was in the lead on the 209th lap when it pitted for differential inspection and fuel and was accidentally burned. Fer-

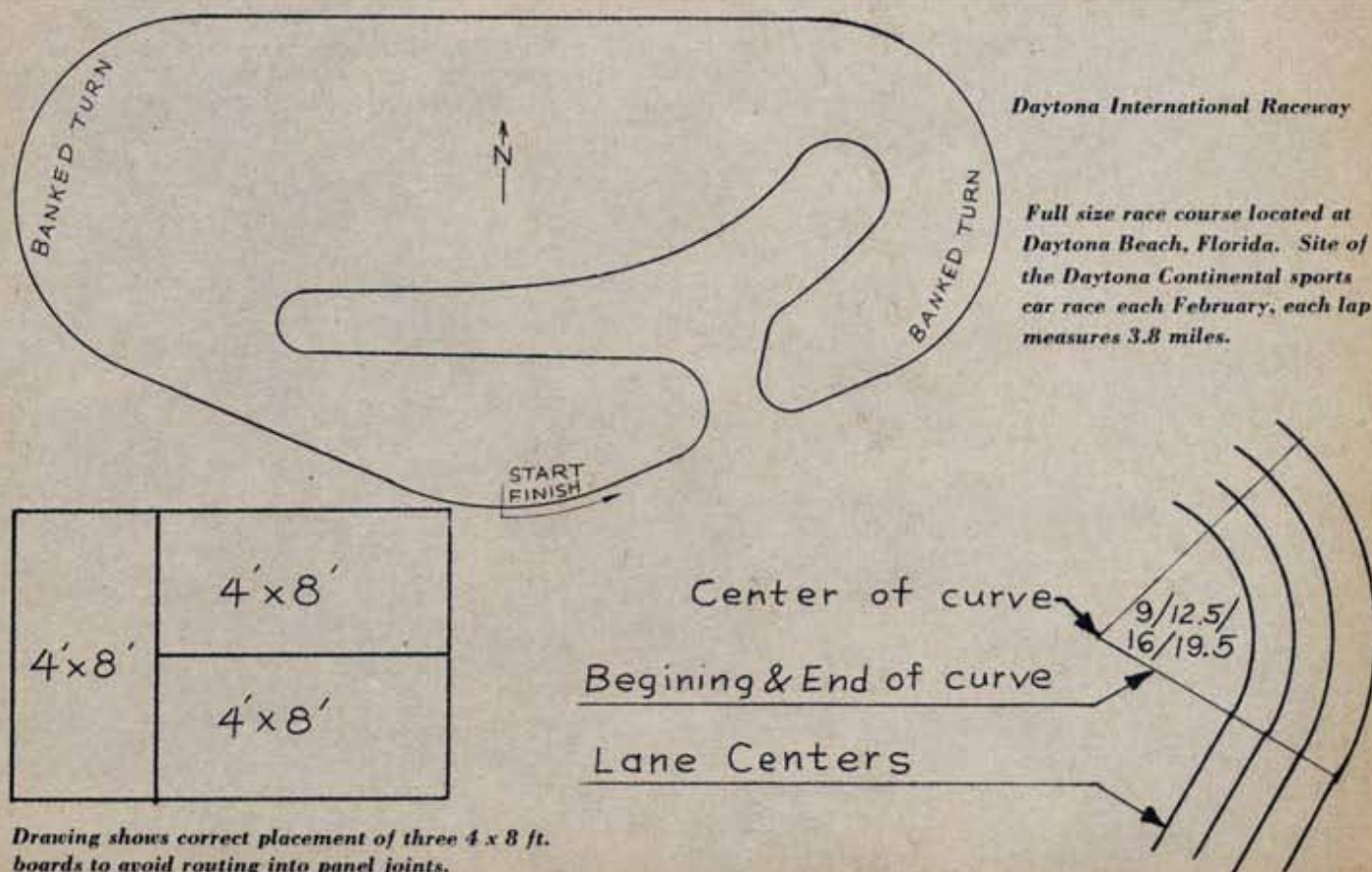
rari won this 327 lap, 2000 kilometer race.

The Daytona course is a 3.8 mile run using 2-1/3 miles of the famous 150 mph Daytona banked oval with the sporty cars cutting into the infield in front of the stands for an additional 1.5 miles of twisting roads. (See figure 1.) It is an extremely fast course! This year's winning Ferrari averaged over 98 miles per hour. The fast, banked, end turns and

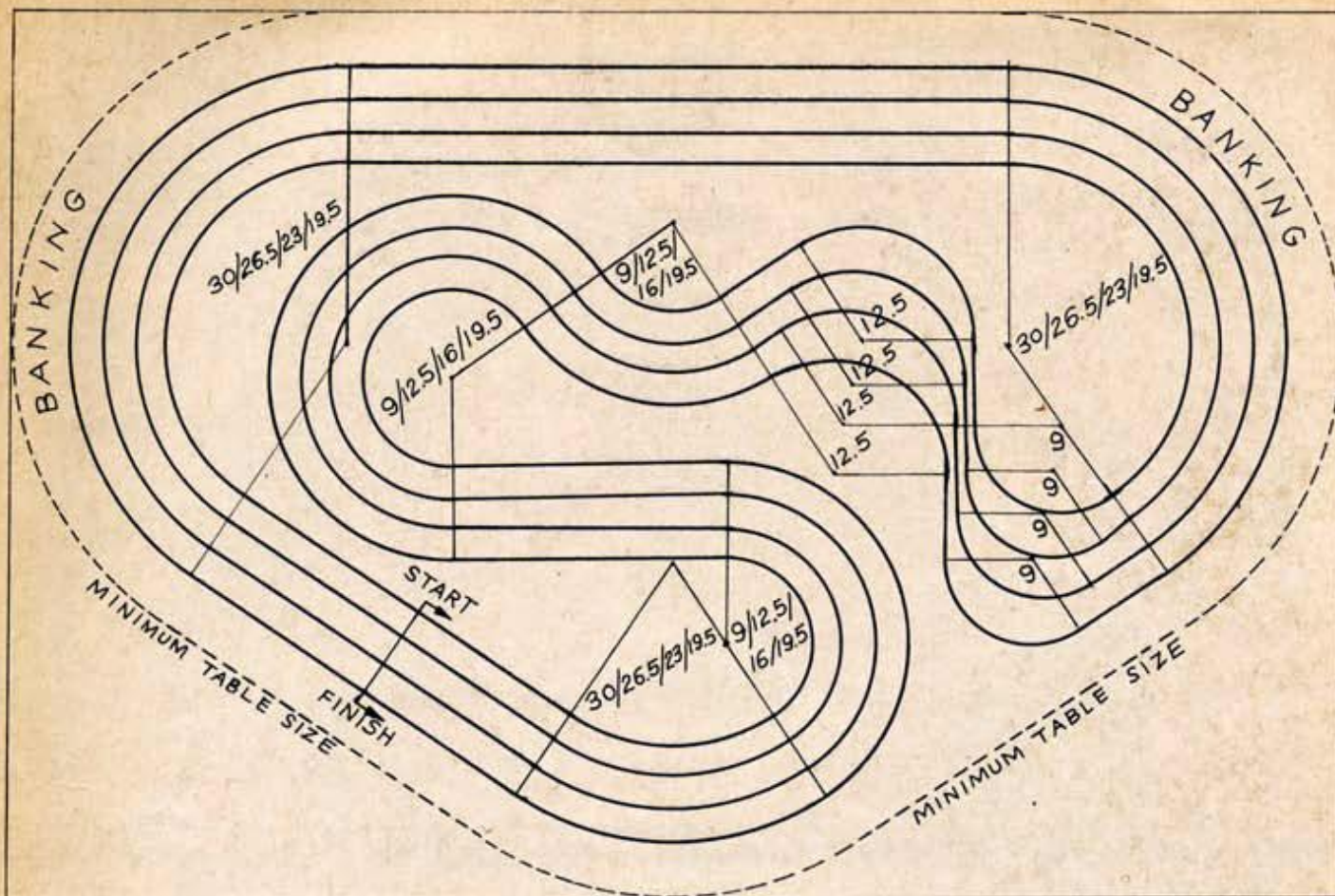
general layout make it an ideal course for high speed model racing.

The Course in Miniature (1/32 & 1/24 scales) Plan No. 1

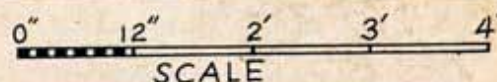
To properly capture the speed and shape of the Daytona course, an area 8 feet x 12 feet was selected as a minimum for a four lane course. This size lends itself to the use of standard 4' x 8' particle boards (Figure 2). A three inch lane spacing is adequate for 1/32 scale



Drawing shows correct placement of three 4 x 8 ft. boards to avoid routing into panel joints.



DAYTONA INTERNATIONAL RACEWAY PLAN No. 1
For 1/32 & 1/24 scale cars



cars, however, on a course of this type, it is a great temptation to run 1/24 & 1/25 scale stock cars so a 3½ inch spacing is used to allow passing. An 18" chicane was inserted to add 'spice' to each lap.

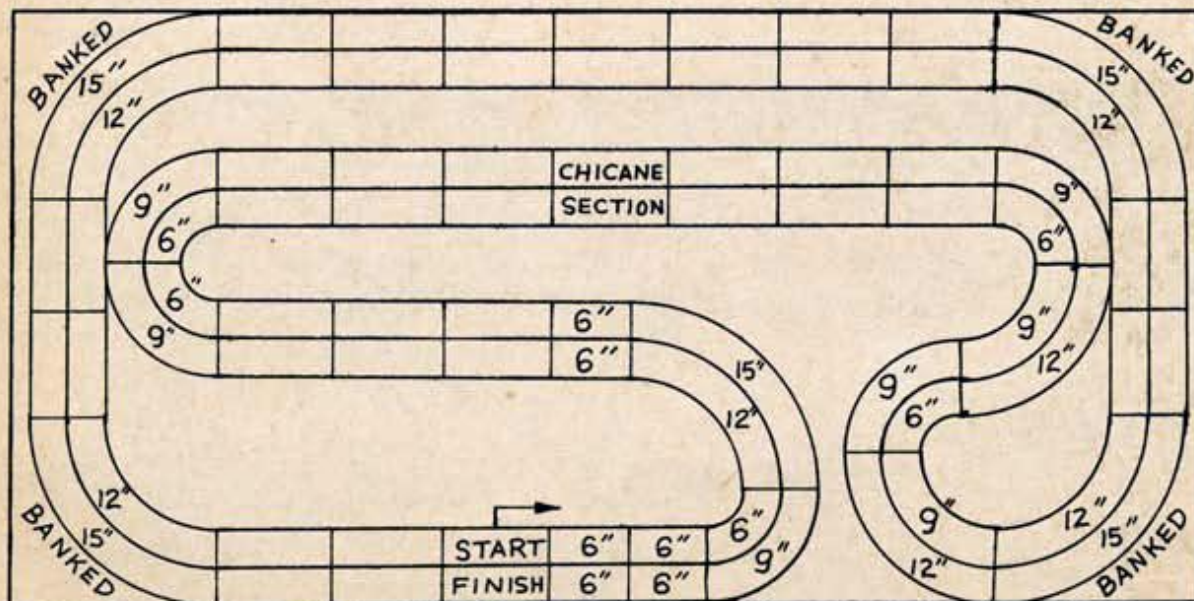
Many of us, particularly HO modelers, prefer to build tracks using commercial

sections. If you're one of these, plans number 2 and 3 are for you.

A race course the size of Daytona can be a rather expensive undertaking when you use all commercial track. You needn't however, purchase all your track sections at once. Either plan can be started from a simple oval, then built

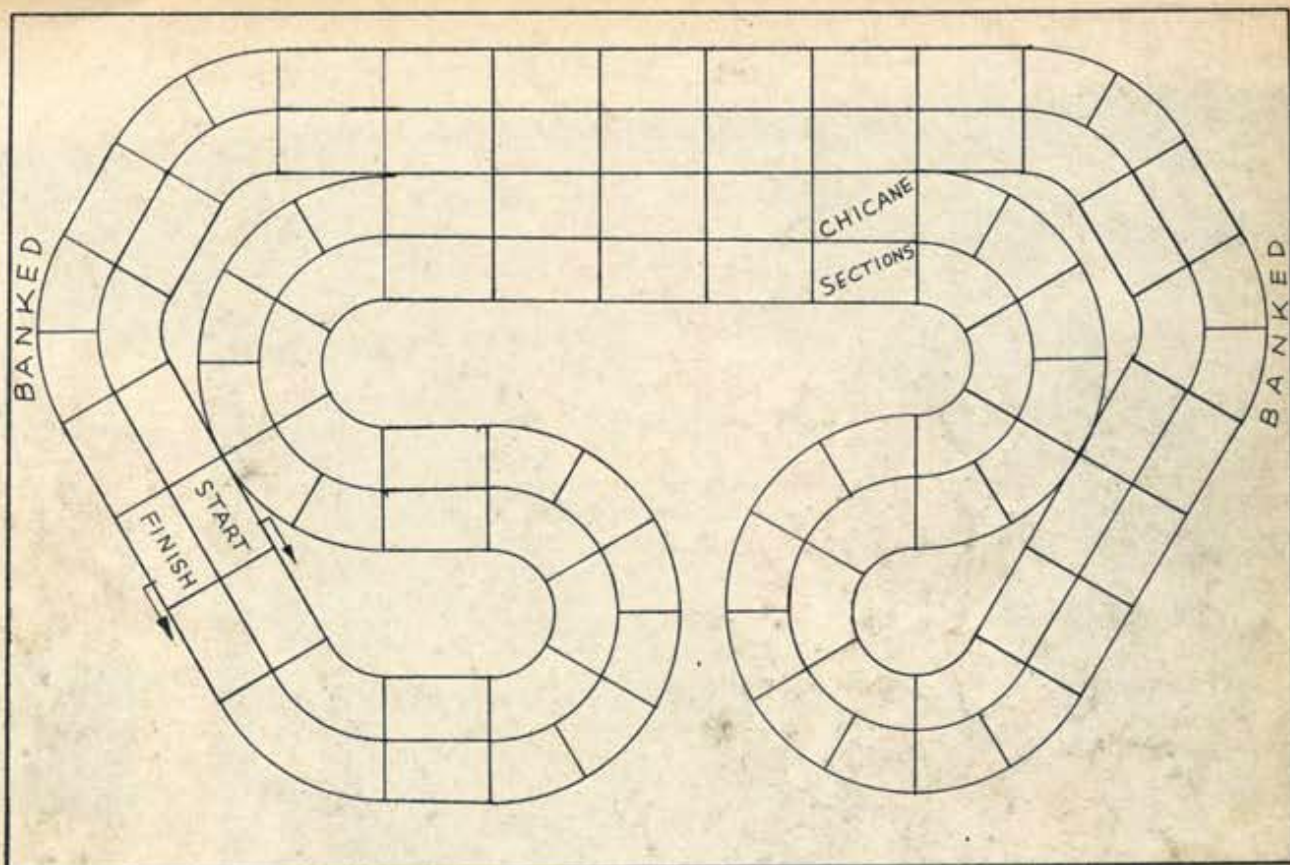
into a two lane track, and finally chicanes, bridges, lap counters, etc., and the third and fourth lanes may be added.

Plan number 2 is laid out using 90 degree segments of a circle. Aurora, Atlas, Wrenn, S.R.M., and Scaletrix all use this portion of a circle for the curved track sections. The chart will show you



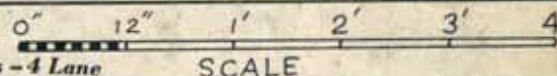
DAYTONA INTERNATIONAL RACEWAY PLAN No. 2

For HO scale cars — 4 Lane — All curves marked with outside radii for HO — All straight sections 9" unless noted.



DAYTONA INTERNATIONAL RACEWAY PLAN No. 3

For Strombecker or Kal-Kar track sections 1/32 or 1/24 scale cars - 4 Lane



exactly how many pieces are required for each brand.

Plan number 3 utilizes only 60 degree track circle segments as supplied by Strombecker, Kal-Kar, Eldon, Varney and V.I.P.

Many will wonder why an overpass was not incorporated to "equalize" lane lengths. The figure 8...all lanes equal right and left turns is a good theory. In actual practice, only the two inner and two outer lanes are even closely equal. Inevitably, one lane will prove to be the fastest and one the slowest. In short, an

overpass is a waste of effort in four lane road racing for anything except appearance. The inner lane is approximately 38 feet per lap, the outer 44 feet per lap for a 41 feet per lane average.

The plan is laid out to scale. To transfer the plan to particle board for routing, first lay out three 4' x 8' particle boards exactly as indicated in figure 2. The plan has the radius center marked and lines are extended from these center points to the lanes to indicate where to start and stop when routing the curves. (See MCS back issues for full details on routing.)

Transfer the track center lines, curve centers, and router stop lines onto the particle board. The three 4' x 8' boards may be framed together as a unit or each board used separately with plug in connections for a portable layout. You may wish to trim the boards to the dotted lines shown on the plan for a minimum of reaching.

NEXT MONTH'S ISSUE WILL FEATURE PLANS FOR BUILDING THE DAYTONA CIRCUIT FROM ALL BRANDS OF COMMERCIAL TRACK, IN ALL SCALES.

Daytona International Raceway Plan Number 2

(Plan #2 is scaled for HO construction but the same layout idea can be used with any set track using 45 degree or 90 degree segments of a circle.)

BRAND	SCALE	LAYOUT SIZE	STRAIGHT TRACK REQUIRED*	CURVED TRACK REQUIRED†	AVERAGE LENGTH/LAP
Aurora	HO	4' x 8'	48-9" sections	5- 6" Radius	33 ft. 3 inches
Atlas	1/87	4' x 8'	6-6" sections	7- 9" Radius	
				7-12" Radius	
				5-15" Radius	
Wrenn	1/52	4' x 8'	56 sections	24 inner	
				24 outer	32 ft.
S.R.M.	1/40	4' x 8'	54 sections	24 inner 7 1/2" Radius	
				12 standard 12 1/2" Radius	30 ft.
Scaletrix	1/30	5' x 9'	32 full str. 8 half str.	16-22 1/2 outer 24-45 standard 8-90 inner	45 ft.

Daytona International Raceway Plan Number 3

(Plan #3 is scaled for Strombecker or Kal-Kar track, however, the same layout idea can be used with any set track using 60 degree segments of a circle.)

BRAND	SCALE	LAYOUT SIZE	STRAIGHT TRACK REQUIRED*	CURVED TRACK REQUIRED†	AVERAGE LENGTH/LAP
Strombecker	1/32	8' x 12'	44 sections	18 standard 36 outer	43 ft.
Kal-Kar	1/32	8' x 12'	44 feet 2 lane	3 full 14" dia. circles 3 full 21" dia. circles	43 ft.
Eldon	1/32	8' x 12'	32 sections	18 standard	49 ft.
(2 lane only)					
Varney	1/32	8' x 12'	28 sections	18 standard	48 ft.
(2 lane only)					
VIP	1/32	8' x 12'	32 sections	18 standard	49 ft.
(2 lane only)					

* Deduct any special, standard length sections such as chicanes, lap counters, bridges, start-finish, Le Mans start, etc. from total.

† Radius measured around outer edge of circle formed by sections.

SOME PERFECT AIDS



One firm that does not necessarily specialize in items for the custom model and slot racing field but should not be overlooked is Perfect Products Co. Scratch builders are familiar with their fine brass tubing, but they have lots of other little goodies that come in handy also. In the tool field, they have a great little jeweler's screw driver set, also a miniature regular and Phillips set. Perfect's self closing forceps, small mechanical fingers, and a small hex-head nut wrench also prove invaluable to the serious builder.

Other Perfect items that come in handy are the needle point oilers and grease guns. With these handy, portable items, you can carry a supply at all times to reach in to hard-to-get areas. A packet of sandpaper of various grits, and an abrasive track cleaner that would consume little space in your carrying case are included in the line also.

Perfect also has two solder packages for modelers. One is the normal rosin core of the diameter most popular in modeling, for working in close areas. The other is the match solder ribbon, no flux needed, handy when you're stuck somewhere without a gun or iron.



TWO SENSATIONAL CHASSIS



Ulrich's new independent rear suspension system opens an entirely new field for the model race "driver" based on actual car practices. The chassis kit, using aluminum and brass construction, has miniature universal joints with full coil springs. Extremely simple assembly is accomplished by only 3 screws. It's just \$3.98, less wheels and motor. The 2nd chassis with conventional rear axle has a novel feature in that a special swivel front axle and pickup carrier keeps the car in the slot, even when one rear wheel raises resulting in no loss of traction or spin outs. This kit sells for just \$1.98 and includes a built in body mount.

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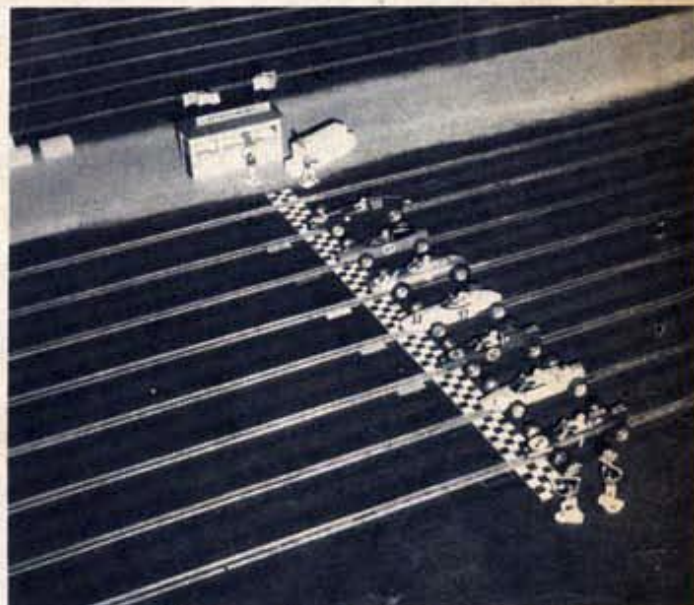
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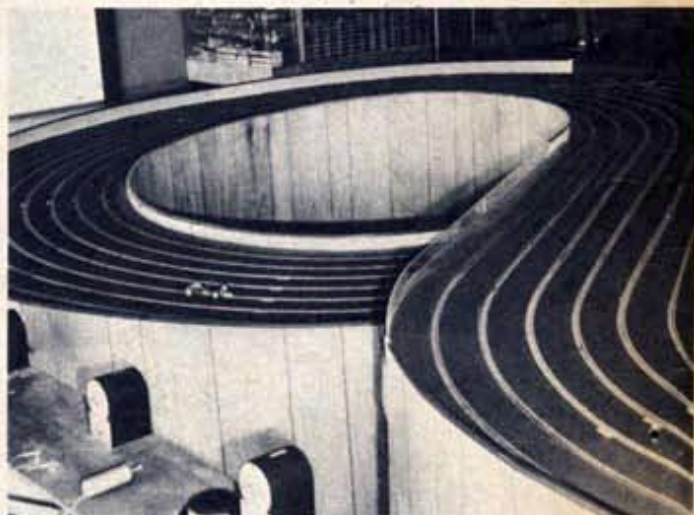
Big Time Slotting



Sporty eight lane tracks offer enthusiasts a real challenge. Overpass equalizes lane distances.



Ready to race. The quality of the track plus the authentic atmosphere adds up to better cars for keener competition.



Lap lengths are equalized by the crossovers.



Sufficient room and a clear view of the entire track is provided for operators and spectators.



FOR FUN AND PROFIT

by George Elliott

Here's great news for the slot racing enthusiast seeking plenty of competition. Now you can race on a track one week and compete on an identical track in a city miles away the following week. This ideal situation is made possible by a new franchise operation known as the Miniature Grand Prix Racing Association. MGPRAs plan to have many modern tracks throughout the country governed by a set of competition rules.

MGPRAs tracks are all 105 feet long, sporting 8 lanes consisting of turns with a radius from 30 inches to 6 feet, "S" turns and a crossover. The average lap speed for this course is 8 to 9 seconds.

Miniature Grand Prix also claims to have the solution for the business minded enthusiast, with a chance to turn his hobby into a profitable business. For a franchise fee of \$10,000.00, MGPRAs will provide a franchise with a modern track and all the necessary fixtures and inventory required to start a profitable operation. The MGPRAs is the first to supply a franchisee with a completely finished retail store and racing center including merchandise. It also offers the franchisee a two week training program so that the business will get off to a smooth start. MGPRAs contends that their centers can earn as much as \$100 a month per lane, plus the additional revenue from the sale of kits and component parts.

Free Trips to Europe Planned

The Model Car Racing Association, a national club with a working arrangement with the MGPRAs, has established a standardized set of racing rules to be observed by all their tracks. MCRA has a program for local, state, regional, national and even international competition. It is conceivable that not too long from now U.S. drivers could win a trip to Europe, and compete against the champions from all parts of the world.

Long straights, esses, track side scenery, automatic lap counters and timers add interest to the course.

Complete Your Collection Of Model Car Science

Still a few left

JUNE, 1963 — the second MCS presents six great fullsize rods and tells how to build the models. There are tips on channeling, metal models and step-by-step instructions for a Fiat-bodied dragster. There is a survey of motors for electric racers and a big report on slot drag racing.

SEPTEMBER, 1963 — More great cars and custom building tips. Part Two of how to build the MCS X-1 and a big survey of tires and wheels. Full reports on cementing and vacuum forming.

OCTOBER, 1963 — Information packed pages for every model car and slot racing fan. Pictures galore of championship cars. More valuable tips on independent rear suspension and hinging early Ford doors.

NOVEMBER, 1963 — Special coverage on the biggest National model contest winners! New techniques for better picture taking. Detailed report on fiberglass bodies and how to power them.

DECEMBER, 1963 — Buyer's guide to new models and accessories. How to make magnetic doors, drag chutes and short wheelbase roadsters. Differentials for slot racers, driving techniques and power for the '41 Willys.

JANUARY, 1964 — A big issue packed with easy-to-read reports on customizing models. Exclusive instructions on building the MCS X-15 Dragster. Slot racers are still talking about tips provided to put new zing in Strombecker cars.

FEBRUARY, 1964 — New ideas on How to Start a Club, Styling, and Painting for Prizes head the list of timeless articles for every model car fan. For the table top buffs, MCS has a detailed report on "O" Gauge.

MARCH, 1964 — Sensational new ideas on planning a slot track plus a complete report on Revell slot cars, and special features on dream cars highlight this collector's issue.

APRIL, 1964 — Detailed instructions on building the Cougar II dream car. Complete info on the \$117,000 Fisher Body Contest. Track test on Eldon cars, and a report on how to get more go from your HO.

MAY, 1964 — Professional advice on designing your car with clay. Exclusive how-to's on building a racecourse for pennies and motorizing Tony Nancy's dragster.

JUNE, 1964 — Expert advice on how the pros turn a piece of wood into a contest winning car. First reports on the Revell contest. Facts you should know about club & commercial slot tracks. Added bonus: 12 ways to mount motors.

July 1964. How to build the EXOTICA T-BIRD, CADILLAC coupe D'elegance and WILD TRUCKS. Motorizing the M.C.S. twister. Build your own scale Cobra. How to judge contests. Simplify your RACING schedules.

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"I'M THE MINI-CHAMP OF THE WORLD"

By Ray Hoy's No. 1 Driver



I'LL NEVER FORGET the day my boss wandered in off the street and bought me. It was pretty warm in that little hobby shop, being July and all, and no air conditioning. I'd been in that plastic package for several days and I was feeling pretty dis-jointed, if you'll forgive the pun.

Maybe I'd better tell you who I am. I'm an Ulrich mini-man, or "instant people," if you prefer. I know you probably won't believe me, but that's your problem, not mine. I mean, people just have an awful time believing some of the simplest things, and anyway, what's so terrible about a talking "instant people?" I mean, "instant person." You're a real people ain't ya? I mean, a real person. Some of the things you jokers say don't exactly make a lot of sense, and I've yet to see any of us Ulrich fellas trying to grow mushroom clouds over the other guy's cities like you do. So quit feeling so superior.

My boss writes an occasional article for MODEL CAR SCIENCE, and he's a slot racing nut, and I like him a lot. He's a little excitable, and hardly ever wins any races. That is, he never USED to win any races, not until he bought me. That really turned the trick, and he's happy as a lark now, what with that sensational winning streak he has going. The poor fella still doesn't know what started it, but I do. I ought to, because I'm the reason. Unfortunately I can't tell him that I'm behind it all, because you humans are on a different frequency than I am. He probably wouldn't believe me anyway, even though he's way out there at times.

We weren't so successful together at first, but it wasn't my fault. Ray, (he's my boss) put me together and placed me in the seat of a Ferrari pusher, with my hands on the steering wheel, which was what I was thirsting after all along, but unfortunately he glued me up solid. This went on for a couple of weeks, and I had to sit there and stare through that plastic windshield and watch those curves rush up at me, all the time sitting there helpless with that immobile wheel in my hands. It was terrifying.

Ah, but then came that glorious day! A club meeting triggered the whole thing. One of Ray's buddies showed up with a car with steering. It was fastened to the steering wheel, and when the front wheels turned, so did the steering wheel. That very night my boss converted the Ferrari to steering, complete with the moveable steering wheel. He disconnected my arms and hooked them back on with pins so they could swing freely. It didn't hurt much, and anyway, it was worth the sacrifice.

With my hands on that wheel I was really in business. My secret weapon however was the piece of aluminum that the boss had glued to my feet, so I could stand up. (I confess, I started life as a spectator, but he converted me to a driver and just left the aluminum there.)

The aluminum strip is what made me the World Champ, you see. Well, I'm not Champion of YOUR world, but I'm widely known to the "Instant People" as World Champ. My boss thinks HE is the slot-racing Champ, at least in his corner of the country, but he didn't actually have much to do with it.

I can see that you don't understand how that aluminum strip on my feet could possibly be used as a secret weapon. I'll tell you. My feet are right by the guide, with one foot near each motor wire. When I reach my "cut-off" point coming into a corner, I just shove each foot forward into the pickup

connections, and it shorts the motor out just like my boss does at the hand controller. He used dynamic braking like everyone else, of course. This caused him no end of bewilderment at first, because I always had to shut off slightly before he did, due to the fact that he was such an over-enthusiastic "hot-shoe" and excitable to boot. I had to laugh at the look on his face during the first few laps after he had installed me in the cockpit. I'd roar into a corner and the Ferrari would start to brake, even though he had his thumb all the way down on the controller. It must have been sort of spooky I guess.

Man, we made beautiful music together from then on. The first big meet we won was at Rockford, Illinois, and we led from start to finish, dusting off old Bill Sippel and Dick Dobson with no trouble, even though George Siposs did give me a little trouble with that wild four wheel drive gadget that he built. You should have seen Ray when he picked up that trophy. What a ham! My face would have turned red if it could have.

I won the next seven races, and my technique improves with each race. I have to be careful though. I believe my boss is beginning to get suspicious. The other night he was leaning over me, oiling the bearings, and he caught me stretching a bit. He gave a heck of a start, and looked me over real close. I just sat there and gave him my best cold-eyed stare. Finally he just shrugged and walked away mumbling to himself.

I'm afraid things have been going too smoothly though. Herbie, (he's the Ulrich driver of George's four wheel drive car) sits there, still fastened down solidly in his bucket seat, but I think he's been trying to reach George with mental telepathy, and if he ever does I know old George well enough to know that he'll go into action fast. Then things will get tough. Maybe the competition will do me good though. It's getting to be a real drag, (excuse the expression) winning one race after another.

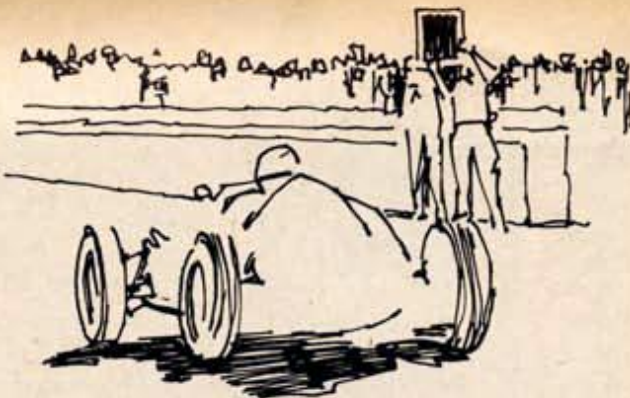
The next time you watch a race, let's have a little more respect for the guy who ACTUALLY is responsible for winning. And I don't mean that clown with the controller in his hand. I mean the guy with the one on his feet. ME!



TOM WOLAHN

"Hello there — I'm the test driver from Strombecker!"

SLOT RACING Track Directory



Alabama

G.B.A. Club, Rt. 1 Box 166, Grand Bay.
Dixie Raceways, Box 244, Loachapoka.
Monte Sano Road Racing Club, 2904 Thompson Circle, Huntsville.

Arizona

Warwick Club, 6760 Nelson Dr., Tucson.
Centennial City Model Road Racing Club, 915 Middlebrook Rd., Prescott.
Phoenix Miniature Auto Racing Assoc., Phoenix.

California

J's Junction Hobby Shop, Oxwood Raceway, 6015 Woodman St., Van Nuys.
Tandem Hobby Shop, 13862 1/2 Chase St., Panorama City.
Bob's Hobbies-Crafts, 2226 E. 4th St., Long Beach.
Babcock R & D, 836 S. La Brea, Inglewood.
Rustic Oak Slot Racing, Hiway 9, Felton.
Oxwood Raceway, 6015 Woodman Ave., Van Nuys.
South Bay Raceways, 1213 Hermosa Ave., Hermosa Beach. Phone 367-2811.
International Hobbies, 1809 Lincoln Blvd., Venice.
International Hobbies, 2302 1/2 Artesia Blvd., Redondo Beach.
Le Mans Hobbies, 3909 Sepulveda Blvd., Culver City.
Ventura Hobbies, 11746 Ventura Blvd., Studio City.
Alamo Raceway, 5 Market Plaza, Alamo.
"The Sleepers," Rt. 4, Box 403, Lodi.
Marina Raceway, 12001 Venice Blvd., Los Angeles.
5th Ave. Hobby Shop, 2505 W. Manchester, Inglewood.
R. E. Owens, 666 North Tustin, Orange.
Pico Drag Center, 9316 Whittier Blvd., Pico Rivera.
Ecurie Concours Model Car Racing Club, 4522 Madoc Way, San Jose.
Pioneer Raceway, 13331 Telegraph Rd., Whittier.
Hobby Shop, 145 S. Pacific Coast Hwy., Redondo Beach.
Howard's, 1624 Contra Costa Blvd., Pleasant Hill.
Hobby Rama, 826 E. 1st St., Santa Ana.
Don Thompson's, 9630 Las Tunas, Temple City.
Golden Gate Model Road Racing Club, 326 Virginia Ave., San Francisco.
Antelope Valley Hobby Center, 45013 N. Yucca Ave., Lancaster.
So. San Joaquin Slot Racing Ass'n., 4022 University Ave., Bakersfield.
Anaheim Miniature Auto Racing Ass'n., 1158 N. Catalpa, Anaheim.
Western Model Raceways, 13204 S. Western Ave., Gardena.
Telco, Inc., 4718 E. Home Ave., Fresno.
Fresno Hobby, 3033 Tulare St., Fresno.
Sebring Miniature Auto Racing, 8504 Garden Grove Blvd., Garden Grove.
Miniature Racing Center, 1526 Del Monte Blvd., Seaside.
D & S Hobby, 184 San Antonio Rd., Mt. View.
K. P. Hobby Shop, 7716 Beverly Blvd., Los Angeles.
International Raceway, 1545 Locust St., Walnut Creek.
Marina Raceway, 12901 Venice Blvd., Venice.
7th Street Speedway Hobbyshop, 3430 E. 7th St., Long Beach 4. Phone: 433-9323.
S.C.C.A. Bill Meyer, 6849 Fishburn Avenue, Bell.
Riverview Hobby, 215 Roberts Lane, Bakersfield.
Reginald Denny's Hobby Shop, 1501 N. Western Ave., Hollywood 27.
Doug's, 11187 Long Beach Blvd., Lynwood.
T & P Raceway, 805 Kerney, Modesto.
University Raceway, 213 Big Springs Rd., Riverside.
Ron's Hobbies, 1131 Los Angeles Avenue, Simi.

Competition Team, 1323 Pegadora Ave., Santa Monica.
R & L Hobby, 2393 E. Wabington Blvd., Pasadena.
North Shore Hobbymodels, Inc., 601 Davis, Evanston.
Sunset Hobby Shop, 2009 West Irving Park, Chicago.
Slot City, 5525 W. Chicago Ave., Chicago.

Indiana

Glendale Hobby, 6101 N. Keystone, Indianapolis.
Broad Ripple Toy & Hobby, 6220 Carrollton Avenue, Indianapolis.
Bob's Hobby Shop, 713 N. Main St., Mishawaka.
Hobby Lobby, 1631 E. Main St., Plainfield.
Krull's Hobby Shop, 414 E. Washington, Ft. Wayne.
Lafayette Model Speedway, 3419 Golden Gate Way, Lafayette.

Iowa

Sunnyside Racing Association, 2301 Gear, Burlington.
Marshall Miniature Speedway Association, 13 North 1st Street, Marshalltown.
Bob Diekmann, 1221 Commercial St., Algona.
The Hobby Shop, 716 10th St., Marion.
Stephens House of Trophies, Inc., 610 W. 3rd St., Davenport.
YMCA Road Racing — Paul Hodges, Burlington Tri-State Racing Association, 813 West Second St., Waterloo.
YMCA Slotters, 412 N. 4th St., Burlington.

Kansas

"Sainty Ram Rodders," Located basement of First Methodist Church, St. Francis.
Herbert Williams, 2009 Clare Rd., Lawrence.
Pitt Strippers, 208 E. 23rd St., Pittsburg.

Kentucky

Frankfort Ave., Toy & Cycle, 2644 Frankfort Ave., Louisville.
Slot Racing Club., P.O. Box 184, Bogalusa.
The Hobby House, Algonquin Manor Shopping Center, Louisville.

Louisiana

Hobby Guide, 4513 Freret St., New Orleans.
Jerome Johnson, 800 N. Alexander St., New Orleans.

Maine

"The Pit Stoppers," 21 Rhode Island Ave., South Portland.

Massachusetts

Witch City Model Car Club, c/o Roger Demers, 18 Silver St., Salem.
Herb Phinney, 52 Thistle St., W. Lynn.
T. Rowe, 87 Congress St., Orange.
John O'Brien, 12 Witt St., Lynn.
R. Ward, 10 Thistleale Rd., Wakefield.
Bill's Hobby Land, 245 Essex St., Salem.
Dick Hassett, 156 Monticello Ave., Boston.
J. J. Slot Racing Club, 505 1/2 Belmont Avenue, Springfield.
Bob's, 695 Grattan St., Chicopee Falls.
Kid Stuff Pit Stop, 32 Dedham Ave., Needham.
Modeler's Haven, 80 Manchester St., Lawrence.
Bic Racing Club, 15 Gibion St., Roxbury.
Sand Stone Speedway, 27 Wesson St., Springfield.

Michigan

Ford Auto Speedway, 381 Brentwood Dr., Inkster.
Top Track Hobby Shop, 6871 Middlebelt, Gardena City.
Seaway Speedway, 2700 Fort, Trenton.

Spartan Hobby, 227 Ann St., E. Lansing.
The Groove Raceway, Main St., Royal Oak.
Rite-Way Hobby, 16137 Schoolcraft, Detroit.
Meri-Five Coin & Hobby, 31208 5 Mile Rd., Livonia.
Train Center, 33601 Plymouth Rd., Livonia.
Whitestone Hobby, 19505 7 Mile Rd., Detroit.
Norwest Detroit Hobby, 18940 W. 7 Mile Rd., Detroit.
Detroit Model Raceway, 11333 Van Dyke, Detroit.
Al's Hobby, 13660 Fort St., Southgate.
Wayne Hobby, 34816 Michigan Avenue, Wayne.
J. J. Hobby, 14241 Harper, Detroit.
Hy's Toy & Hobby, 9 Mile at Coolidge, Oak Park.
Tracy's Speedway, 4319 Milan SW, Wyoming 9.
Top Track, 6871 Middlebelt, Garden City.
Jack's Model Shop, 3502 Fenton Rd., Flint.

Minnesota

The Dukes of Oil, 1009 W. 13th St., Wilmar.

Missouri

Ecurie Liberty Club, 906 West Hiway 10, Liberty.
Dunn's Den, 7114 Prospect, Kansas City.
Keencraft Hobby Center, 5300 E. 24th St., Kansas City.

Montana

Magic City Model Racing Assoc., 132 Santa Fe Dr., Billings.

Nebraska

Traction Masters, 5513 Woolworth Ave., Omaha.
Hobby Center, 6111 Military Ave., Omaha.

New Hampshire

Model Road Racing Club, Box 296, Charleston.
New England Hobby & Sports Center, 94 W. Pearl St., Nashua.

Nevada

"Henderson Sidewinders," 19 Water St., Henderson.

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Richard Erickson, 517 80th St., North Bergen.
Totowa Hobby Shop, 388 Union Avenue, Paterson 2.
Instant Speedway, 649 Laurel Ave., Hazlet.
Colonia Speedways, 70 Berkeley, Colonia.
Tiny Tots, Inc., 236 W. Front St., Plainfield.
Richard N. Hughes, 45 Hemlock Road, Short Hills.
Tom Ferguson, 22 Hollis Dr., Ho-Ho-Kus.
Alan Douglas, 160 Lincoln.
Tri-O-Rama, U.S. Route 46 Parsippany.
Vince's Hobby House, 555 Lexington Ave., Clifton.
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continued on page 64

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Miniature Grand Prix of Van Nuys, 13360 Sherman
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"Whittier Raceways," 1521 West Whittier Blvd., La
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D & J Hobby Shop, 699 N. 13th Street, San Jose.
International Raceway, 1545 Locust Street, Walnut
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Modelcraft, 1150-52 Carson & Orange, Long Beach.

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Aurora High Model Club, c/o Stan Reeves, 10th and
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Model Hobby Shop, 38th and Federal Blvd., Denver.
Scale Model Engineering Club, Science Dept., Euclid
Jr. High School, Littleton (Denver South).

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Hobbiart, Inc., 4713 Kirkwood Highway, Wilmington.

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Hobby Crafters, 5735 Park Blvd., Pinellas Park.
Mr. B's Paints & Hobbycraft, 10020 N. 30th, Tampa.

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Catamba Auto Modeler's Slot Division, 516 Belmont
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Bill Scott, 5301 Randolph Road, Charlotte.
Buster Haines, 978 Wellington Rd., Winston-Salem.

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Jerry Osborne, 6127 Hammel Ave., Cincinnati.
Lakewood Scale Model Raceways, 17114 Detroit Ave.,
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Carroll Course, 2729 Cypress Way, Cincinnati.
Forest City 1/25thers, c/o Ron Smith, 3344 Linden
Rd., Rocky River 16.
Lush Hobby Shop, 812 Bennett St., Marion.
Slot Racing Center, 3154-56 Madison Rd., Cincinnati.
Race-O-Rama, 15711 Madison, Lakewood 7.
The Toledo Groove, 1064 Laskey Rd., Toledo.
Richard Grossman, 2910 Washington Blvd., Cleveland
Heights 18.
Mark Stewart, 1078 Stewart St., Newark.
Slot Racing Ass'n., 523 South St., S.E., Warren.
Slotlers, Inc., 1141 N. Memorial Dr., Lancaster.
Pit Stop of Toledo, 820 Starr Ave., Toledo.
Race-O-Rama, Inc., 15711 Madison Ave., Lakewood.

Oklahoma

Speedcraft Hobby Center, 700 N. Main St., Owasso.
Oklahoma City Slot Racing Ass'n., Eureka Enterprises,
Inc., 2712 N.W. 10th St., Oklahoma City.
Big Top Hobbies, Hillcrest 2108 S.W. 59, Oklahoma
City.

Oregon

Northwest Scale Racing Association, 1728 N.E. 40th
St., Portland.
Western Scale Speedway Ass'n., 480 Minnesota St.,
Lebanon.
Miracle Miles, Highway 101, Box 643, Taft.
Pacific Northwest Miniature Racing Ass'n., 426 State
St., Salem.

Pennsylvania

Carmichael's Slot Car Racing Ass'n., 212 Pine St.,
Carmichael.
Baby Town Toys, Germantown Pike & 202, Norristown
Sq., Norristown.
Jay McCoy, 272 Broughton Lane, Villanova.
John A. Sacco, Jr., 30 Ingram Ave., Pittsburgh 5.
Allied Hobbies, 21 So. 16th St., Phila.
Drag City, Street Rd., & Bustleton Pike, Feasterville.
Trainorama, Inc., 3401 Saw Mill Blvd., Drentwood
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Northmont Slot Racing Ass'n., 703 Crescent Ave.,
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Rhode Island

The Snake Pit, 132 Brook St., Woonsocket.
Cumberland Roadway, 244 Hilltop Rd., Cumberland.

South Carolina

Model Auto Racing Association of Columbia, 1801
Green St., Columbia.

Tennessee

Hobbycraft, 4003 Hillsboro Rd., Nashville.
Southern Appalachian Miniature Road Racing Assoc.,
914 E. Center St., Kingsport.
Slot Car Racing Assoc. of Morristown, 632 Houn Dr.,
Morristown.
Hobbycraft Hobby Shop, 4003 Hillsboro Rd., Nashville.

Texas

Ohmco Raceway, 837 W. Davis, Dallas.
C. K. Beck Co., 1420 N. McCulloch Ave., San Antonio.
S & L Raceway, c/o James Smith, 717 So. 11th, Temple.
Austin Scale Road Racing Ass'n., 1702 Red River St., Austin.
Hobby Town, 5224 Cedar St., Houston.
Rose City Rodders, 3700 Bain Pl., Tyler.
Action Speedway, 837 W. Davis St., Dallas.
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Utah Modelcar Speedways — Douglas Models, 122 E. 2nd South, Salt Lake City.
Keith's, 170 East 8th So., Salt Lake City.

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Empire Hobbies & Crafts, 6740 Empire Way South, Seattle.
Pit Stop Speedway, 12706 Rent On Ave., So. Seattle.
Chrystell Hobbies, 415 Capital Way, Olympia.

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Setra, 2024 N. 48th St., Milwaukee.
Road Angel Auto Club, 1056 Elmore St., Green Bay.
Oklahoma Hobby Shop, 1103 W. Oklahoma Blvd., Milwaukee.
Tri-City Dragway, c/o Dennis Schmidt, Box 215, Stratford.
Midwest Scalextric Associations, 2474 So. 5 Place, Milwaukee.
Racing Association, 1337 So. 86 St., West Allis.
Friess Hobby Studio, 47 N. Main St., Fond du Lac.

Canada

Maxport Slot Car Racing Club, 5 Selmar Road, Weston, Ontario.
Rigby's Variety Shop, 3847 Bloor St., West, Islington, Ontario.
Tom Carter, 53 Columbia St., W., Waterloo, Ontario.
Etobicoke Model Racing Car Club, Rigby's Variety Hobby, 3847 Bloor St., W. Toronto.
Maxport Racing Club, 5 Selmar Ave., Toronto.
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Joe's, 1616 Gerrard St., E., Toronto.
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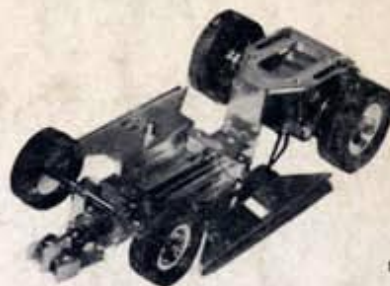
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